

# Handbook of Hawaiian Weeds

*Edited by*

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and G. G. Motter

SECOND EDITION

*Revised and Expanded by*

Robert T. Hirano

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Harold L. Lyon Arboretum  
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# CONTENTS

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|                             |     |
|-----------------------------|-----|
| Foreword to First Edition   | vii |
| Acknowledgments             | ix  |
| Descriptions                | 1   |
| Key to Added References     | 456 |
| Addendum                    | 457 |
| References                  | 461 |
| Illustrated Glossary        | 465 |
| Glossary of Botanical Terms | 469 |
| Index                       | 475 |

## FOREWORD TO FIRST EDITION

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The need for a comprehensive handbook about Hawaiian weeds has long been expressed by persons and groups interested in one or more aspects of identifying and controlling weeds. It is hoped that this handbook will assist the agriculturist, rancher, gardener, researcher, and student in identifying the principal weeds of Hawaii.

For many years, the classic references for those seeking non-technical information about some of the weeds found in Hawaii were *The Manual of Wayside Plants of Hawaii* by Willis T. Pope (1929) and *In Gardens of Hawaii* by Marie C. Neal (1948). In 1961, when Miss Neal was engaged in preparing a new edition of her book (Bishop Museum Press, 1965), Dr. Noel Hanson, at that time head of field research on weed control at the Experiment Station, Hawaiian Sugar Planters' Association, was able to borrow from the Pope family the original plates on which the late Dr. Pope had based his book—now long out of print. Under Dr. Hanson's guidance, the Pope nomenclature was brought up-to-date in consultation with Miss Neal, and some additional drawings were prepared from fresh specimens. The drawings only were reproduced by the Hawaiian Sugar Planters' Association in *Weeds Manual for the Hawaiian Sugar Industry* (1963)—this manual was designed for use by agricultural trainees and by weed control personnel on Hawaiian sugar plantations. Interest in the manual was so great that the supply was exhausted within a few months.

Late in 1964 an informal meeting was held to discuss appropriate ways of updating the 1963 *Weeds Manual* and of providing descriptive text material; present at the meeting were representatives of the College of Tropical Agriculture of the University of Hawaii, the Hawaii State Department of Agriculture, the Pineapple Research Institute, and the Hawaiian Sugar Planters' Association. It was decided that the Experiment Station of the Hawaiian Sugar Planters' Association—with the available drawings and working files from the previous *Weeds Manual*, and with its editors, artists, and printing facilities—would undertake the responsibility for preparing a suitable handbook of Hawaiian weeds, and that representatives of the other organizations would provide advice and technical support. The Executive Committee of the Hawaiian Sugar Planters' Association made available a modest revolving fund to make production of this volume possible; the Hawaii Weed Conference made financial contributions, as did three of the chemical companies which supply herbicide chemicals to agriculture.

October 1966

Edith L. Haselwood  
Gretchen G. Motter  
Honolulu, Hawaii



## ACKNOWLEDGMENTS

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For the financial assistance that made it possible to publish this book, the editors express appreciation to the following organizations: **Dow Chemical Company; E. I. du Pont de Nemours & Company; Geigy Agricultural Chemical Division; Hawaiian Sugar Planters' Association; Hawaii Weed Conference (Hawaii, Kauai, and Oahu Sections).**

Production of this handbook was made possible only through the whole-hearted cooperation of volunteer advisers—all of them specialists in a particular phase of weed identification or control. The editors are particularly grateful to James Y. Kim and Bernard H. Shinbara, both of the Hawaii State Department of Agriculture, and to H. Wayne Hilton and Dan F. Jones of the Experiment Station, Hawaiian Sugar Planters' Association; these four men gave unstintingly of their time and talents in checking source material, reviewing drawings and terminology, and obtaining specimens from the field so that the artists had a constant supply of fresh material. In addition, the editors are indebted to Drs. Roman Romanowski and Peter Rotar of the College of Tropical Agriculture, University of Hawaii, for their never-failing interest, for their patience, and for their careful perusal of drawings and manuscript drafts. As the Bishop Museum's contribution to this project, the late Miss Marie Neal advised on current botanical terminology, and Dr. Harold St. John reviewed terminology and drawings.

Clemente Lagundimao was responsible for over-all design; Mrs. Lea Ramage did the typesetting; new and revised drawings were prepared by Marilyn Yee and Hillary Walker; Linda Mimura and Kenneth Ramage gave valuable assistance in checking references and preparing the cross-indexes on which this volume is based.

Credit must be given to certain publications from which illustrations have been reproduced. Drawings on pages 9, 25, 27, 33, 39, 41, 43, 51, 59, 65, 67 (flower and seed), 75, 77, 83, 89, and 95 are taken from *USDA Misc. Pub. 200 (1st ed.)*; 3, 35 (seed), 57, 91, 93 (seed) from *USDA Misc. Pub. 200 (2nd ed.)*; 15, 17, 35, 53, 61, 73, from *USDA Misc. Pub. 243*; 69 from *Grass, The Yearbook of Agriculture, USDA (1948)*; 97, 101, 103, 105, 115, 117, 129, 131, 145, 147, 149, 157, 161, 163, 167, 177, 179, 189, 191, 195, 197, 205, 223, 229, 237, 241, 243, 247, 249, 251, 257, 265, 269, 277, 279, 287, 289, 291, 293, 297, 299, 301, 307, 309, 311, 313, 315, 325, 327, 333, 335, 343, 345, 353, 355, 359, 375, 377, 381, 383, 387, 389, 393, 401, 405, 407, 409, 417, 421, 429, 433, 441, 445, 447, 449, 453 from *Manual of Wayside Plants of Hawaii* (Pope, 1929); 11, 21, 31, 45, 47, 55, 63, 87 from *The Grasses of Hawaii* (A. S.

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Hitchcock, 1922, Bishop Museum Memoirs, Vol. 8, No. 3); 7 from *Haw. Agr. Exp. Sta. Bull.* 82; 175, 193 from *Haw. Agr. Exp. Sta. Bull.* 93; 23, 71, 181, 411 from *Noxious Weeds of Hawaii* (Hosaka, 1945); 397 from *Univ. Haw. Extension Bull.* 62; and 81, 109, 139, 141, 151, 185, 187, 215, 225, 227, 259, 303, 329, 331, 347, 379, 387, 393, 399, 407, 419, 423, 437, 453, 455 from *Univ. Haw. Res. Pub.* 6.

Some of our illustrations are modifications of drawings in earlier publications—pages 281 (fruit), 305, 321, 323, 357 (flower and fruit), and 361 (flower and fruit) are based on Degener; 261 is based on Pope; flowers on pages 113 and 155 are after St. John and Hosaka; and 201 (flower) after Gleason.

October 1966

## DESCRIPTIONS

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Descriptions and notes have been compiled from standard texts of botany, from local publications, and from information provided by members of the group that advised the editors. Within the descriptions, numbers in parentheses identify the reference sources; the complete list of references starts on page 461. Wherever possible, terminology is simplified; a glossary of technical terms will be found on page 469.

For legal definitions and lists of noxious weed species, and for up-to-date information on the regulations under the Noxious Weed Law of the State of Hawaii, the reader is advised to consult the State Department of Agriculture.

The general organization follows that of Miss Marie Neal in *In Gardens of Hawaii*—families are arranged in an evolutionary order, beginning with the simplest of the flowering plants (the grasses) and ending with the composites. Within each family, species are arranged in alphabetical order according to scientific name; synonyms are given, as are the most familiar common names. The index lists scientific names, synonyms, and common names.

To be useful, a handbook such as this should be revised from time to time. Comments from users will be welcome. Send suggestions and corrections to: Publications Manager, Experiment Station HSPA, Honolulu, Hawaii.

October 1966

For the second edition all names have been updated to conform to Harold St. John's *List of Flowering Plants in Hawaii* (1973). An Addendum listing seventy-nine new weed species has also been added. These species are listed alphabetically by family, with common names, references, and area of origin.

February 1983

R.T.H.

## GRAMINEAE (GRASS FAMILY)

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*Agrostis alba* L.

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### REDTOP

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#### Description:

A perennial, usually 1 to 3 feet high, with strong creeping, underground stems. **Stems** smooth, usually erect but sometimes spreading at the base. **Leaves** 2 to 6 inches long, 1/8 to 1/4 inch wide, rough to the touch on the upper surface, smooth on the lower. **Flowering heads** 4 to 8 inches long, commonly reddish, usually with short spreading branches. **Spikelets** not more than 1/16 inch long (24).

#### Propagation:

By vigorous creeping underground stems. Spreads rapidly and forms extensive colonies.

#### Habitat:

Grows well in moist regions at higher elevations.

---

#### History:

Native to Eurasia. Introduced to Hawaii in 1915.

#### Note:

A fair forage grass.

---



## GRAMINEAE (GRASS FAMILY)

---

*Andropogon bicornis* L.

---

### WEST INDIAN FOXTAIL

---

#### Description:

An upright perennial, about 3 feet high. **Leaves** long and narrow, 4 to 10 inches long, margins rough to the touch.

**Flowering head** large, feathery (16).

#### Propagation:

By seed. Dispersed by wind and water.

#### Habitat:

At present, found in the Kau district, Island of Hawaii.

---

#### History:

Native to South America. Believed to be of very recent accidental introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A prolific seeder which forms dense stands, shading out more desirable forage.

---



## GRAMINEAE (GRASS FAMILY)

---

*Andropogon pertusus* (L.) Willd.

Synonyms: *Holcus pertusus* L., *Bothriochloa pertusa* (L.) A. Camus

---

### PITTED BEARDGRASS

---

#### Description:

An erect perennial, 1 to 3 feet high. **Stems** usually smooth, often much branched at the base. **Leaves** 2 to 8 inches long, 1/16 to 1/8 inch wide, sparsely to densely hairy. **Flowering heads** usually with two to four short, slender, rather hairy branches arranged on short axis (24).

#### Propagation:

By seed.

#### Habitat:

A weed in dry pastures and rangelands at low elevations.

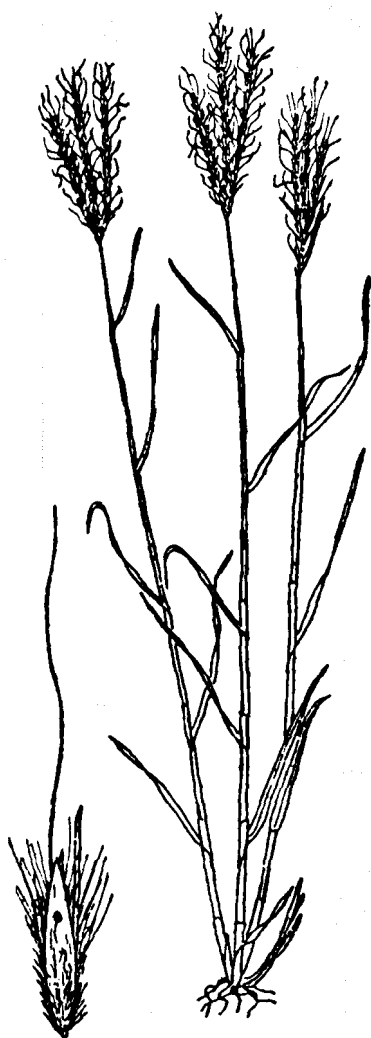
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#### History:

Native to the Old World tropics. Introduced to Hawaii in 1916.

---





## GRAMINEAE (GRASS FAMILY)

---

*Brachiaria mutica* (Forsk.) Stapf

Synonyms: *Panicum muticum* Forsk., *P. purpurascens* Raddi, *P. barbinode* Trin., *P. guadaloupense* Steud.

---

### PARA GRASS, TALL PANICUM, CALIFORNIA GRASS

---

#### Description:

A spreading, long-lived perennial, rooting at the lower joints.

**Stems** 6 to 8 feet or sometimes as much as 15 feet long, trailing and intertwining, forming dense masses; the joints and sheaths hairy. **Leaves** 4 to 12 inches long, 1/4 to 1/2 inch wide, with stiff hairs at the base. **Flowering heads** 5 to 12 inches long, open, usually purplish, with spikelike spreading one-sided branches (24).

#### Propagation:

By seed, long runners, and cuttings. Rarely flowers.

#### Habitat:

Adaptable to a wide range of moisture conditions. Prefers wet regions, growing luxuriantly in swampy areas; yet can survive severe drought. A very troublesome weed in cultivated areas, in wastelands, and along roadsides.

---

#### History:

Native to Africa. Introduced to Hawaii in 1902; now an important forage grass of lowland pastures.

---



## GRAMINEAE (GRASS FAMILY)

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*Cenchrus echinatus* L.

Synonyms: *C. pungens* HBK., *C. brevisetus* Fourn.

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### SANDBUR

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#### Description:

A smooth branching annual, 1 to 2 feet high, bent and spreading at the base, growing in clumps. **Stems** usually flattened, dark green. **Leaves** flat, 2 to 7 inches long, 1/8 to 3/8 inch wide. **Fruiting stalks** spikelike, 1 to 3 inches long, composed of spiny burs. **Burs** globular, clustered, usually purple, about 1/4 inch in diameter; barbed spines irregular in length and thickness, the inner ones larger than the outer (24).

#### Propagation:

By seed. Burs, in which seeds develop, detach readily at maturity and stick to hairs and clothing.

#### Habitat:

Found in dry and in moist regions. Thrives in light, sandy soils at low elevations; spreads rather rapidly in moderately moist regions. A weed in lawns, cultivated areas, waste places; rarely found in pastures.

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#### History:

Native to tropical America. First noticed in the neighborhood of Honolulu in 1867.

#### Note:

Declared **noxious** in Regulation 2.

---



## GRAMINEAE (GRASS FAMILY)

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*Chloris divaricata* R. Br.

---

### STAR GRASS

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#### Description:

A creeping perennial with upright flower stalks, freely branching at lower joints; the whole plant smooth. **Leaves** long and narrow. **Flowering stems** 5 to 10 inches long, with four to seven nearly horizontal spikes spreading from a common center; the spikes 2 to 4 inches long, light purplish-green when young, straw-colored when old. **Spikelets** 1/8 inch long, pale, narrow, with slender bristles (24).

#### Propagation:

By seed and creeping runners.

#### Habitat:

Found in dry regions. A problem weed especially in lawns; a minor problem in cultivated areas.

---

#### History:

Native to northern Australia. First collected in Hawaii in 1932.

#### Note:

Declared **noxious** in Regulation 2.

---



## GRAMINEAE (GRASS FAMILY)

---

*Chloris inflata* Link

Synonyms: *C. barbata* (L.) Sw., *C. paraguayensis* Steud., *Andropogon barbatus* L.

---

### SWOLLEN FINGERGRASS

---

#### Description:

An annual, 1 to 2 feet high. **Stems** erect or sometimes bent at the base and rooting at the lower joints, smooth, usually flattened and purple or pink at the base. **Leaves** flat, 1 to 5 inches long, 1/16 to 1/8 inch or rarely as much as 1/4 inch wide, usually bluish-green, rough on the edges, often long-hairy near the base on the upper side. **Flowering heads** of 2 to 11 flexuous, purple, fingerlike spikes, 1 to 2 inches long at the tips of the stems. **Spikelets** purplish, broad, with 3 slender bristles (24).

#### Propagation:

By seed.

#### Habitat:

Very abundant in dry regions at lower elevations. A weed in pastures, cultivated areas, wastelands, and along roadsides.

---

#### History:

Native to tropical America. First collected in Hawaii in 1906.

#### Note:

Young plant grazed by stock, but soon becomes unpalatable and a pest.

---





## GRAMINEAE (GRASS FAMILY)

---

*Chloris radiata* (L.) Swartz

Synonym: *Agrostis radiata* L.

---

### RADIATE FINGERGRASS, PLUSH GRASS

---

#### Description:

An annual, 1 to 2 feet high. **Stems** smooth, flattened, sometimes purplish at the joints, usually spreading and much branched at the base. **Leaves** 2 to 6 inches long, 1/16 to 1/8 inch wide, with a boat-shaped rounded tip, rough throughout, and usually with a few long hairs near the base on the upper side. **Flowering heads** of numerous delicate fingerlike spikes 1 to 3 inches long, close together and upright at the tips of the stems. **Spikelets** slender, with delicate bristles (24).

#### Propagation:

By seed.

#### Habitat:

Found at low to medium elevations. A common weed along roads, in drier wastelands, cultivated areas, pastures, and on ditch and reservoir banks.

---

#### History:

Native to tropical America. Accidentally introduced to Hawaii; first collected in 1851.

---



## GRAMINEAE (GRASS FAMILY)

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*Chrysopogon aciculatus* (Retz.) Trin.

Synonyms: *C. subulatus* (Presl) Trin. ex Steud., *Andropogon aciculatum* Retz., *A. subulatus* Presl, *Rhaphis acicularis* (Retz.) Desv., *R. trivialis* Lour.

---

### PILIPILIULA

---

#### Description:

An extensively creeping perennial with many rather brittle, leafy stems rooting at the joints and forming a close, thick mat. **Leaves** flat, 1 to 3 inches long, 1/8 to 1/4 inch wide, rough on the edges with rather widely-spaced sharp teeth, a few long stiff hairs near the base on the upper sides, thin and rather wavy, glossy-green. **Flowering stems** bent at the base, with crowded leaves; erect above, naked, stiff, and ending in rigid, erect, reddish-purple, narrow flowering heads, 1 to 2 inches long (24).

#### Propagation:

By seed and widely-creeping runners.

#### Habitat:

Rather abundant in open areas and rocky slopes from sea level to about 2,000 feet. A weed in pastures, rangelands, and waste areas.

---

#### History:

Native to the East Indies, India, and China. Either native to Hawaii or of very early introduction.

#### Notes:

Very troublesome because the sharp barbed points of the spikelets stick to clothing and to hair of animals. Practically worthless as forage.

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## GRAMINEAE (GRASS FAMILY)

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*Coix lacryma-jobi* L.

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### JOBS TEARS

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#### **Description:**

An annual, 1 to 6 feet high. **Leaves** long and slender, parallel-veined. **Stems** with white pith. **Flowering heads** nodding and consisting of the female flowers enclosed in a very hard, nearly globular capsulelike covering which is green at first but turns black and then white with age; male flowers extend from the heads in drooping tassel-like form (20).

#### **Propagation:**

By seed.

#### **Habitat:**

Grows wild in damp waste lands. A weed in and along irrigation and drainage ditches.

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#### **History:**

Native to East Indies. First collected in Hawaii in 1895.

#### **Note:**

Sometimes cultivated as an ornamental.

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## GRAMINEAE (GRASS FAMILY)

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*Cymbopogon refractus* (R. Br.) A. Camus

Synonym: *Andropogon refractus* R. Br.

---

### BARBWIRE GRASS, SOAP GRASS

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#### Description:

A bunchy perennial, 1 to 3 feet high. **Stems** tough with a dense mass of harsh, wiry foliage at the base. **Leaves** 6 to 10 inches long. **Flowering heads** 4 to 12 inches long, narrow, rather stiff and erect; the racemes finally bent backward, one on either side of the stem, resembling barbwire (24).

#### Propagation:

By seed. The seed clings to fur of animals. Also new shoots are produced around the base.

#### Habitat:

Found in dry to semi-dry regions from 300 to 3,500 feet.

---

#### History:

Native to Australia. First reported in Hawaii in 1936.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Crowds out forage plants and is a very prolific seeder. Avoided by livestock because of its soapy taste.

---





## GRAMINEAE (GRASS FAMILY)

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*Cynodon Dactylon* (L.) Pers., var. *Dactylon*

Synonyms: *Panicum Dactylon* L., *Capriola Dactylon* (L.) Ktze., *Digitaria Dactylon* (L.) Scop., *D. stolonifera* Schrad.

---

### BERMUDA GRASS, MANIENIE

---

#### Description:

An extensively creeping perennial, rooting at the joints along the surface of the ground or producing scaly underground stems.

**Stems** smooth, flattened, usually prostrate but sometimes somewhat upright. **Leaves** narrow, usually 1 to 4 inches long, 1/4 to 1/8 inch wide, rough on edges. **Flowering heads** with four to five short fingerlike spikes at the tips of the stems, standing conspicuously above the main plant body (24).

#### Propagation:

By seed, vegetative cuttings, creeping runners, and a vast system of underground stems.

#### Habitat:

Thrives in dry, sunny areas -- open fields and near beaches -- from sea level to 4,000 feet; dies out in shade. A problem weed in cultivated areas.

---

#### History:

Native to warmer parts of the Old World. Introduced to Hawaii about 1835; now a valuable lowland pasture and lawn grass.

#### Notes:

Can be a troublesome weed because of its drought resistance and great persistence, once established. Also quite variable in form.

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## GRAMINEAE (GRASS FAMILY)

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*Dactyloctenium aegyptium* (L.) Willd.

Synonyms: *Cynosurus aegyptius* L., *Eleusine aegyptia* (L.) Desf.

---

### BEACH WIREGRASS

---

**Description:**

A weedy annual, 1/2 to 1 foot high, more or less prostrate, smooth. **Leaves** short, hairy. **Flowering stems** erect, naked, with two to five short, thick, dark-colored spikes borne at the summits (24).

**Propagation:**

By seed.

**Habitat:**

Abundant in dry areas near the sea. A weed in waste places and pastures.

---

**History:**

Native to the Old World. First collected in Hawaii in 1906.

**Note:**

Valueless as forage.

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## GRAMINEAE (GRASS FAMILY)

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*Digitaria adscendens* (HBK.) Henr.

Synonyms: *D. Henryi* Rendle, *Panicum adscendens* HBK.

---

### HENRYS CRABGRASS

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#### Description:

Plants creeping and rooting by runners, forming dense mats; each plant often covering an area as much as 2 feet across.

**Stems** smooth, usually flattened. **Leaves** flat, dark green or blue-green, 1 to 4 inches long, 1/8 to 1/4 inch wide, smooth or occasionally sparsely long-hairy on the upper surfaces.

**Flowering heads** with two to four slender fingerlike branches, 1 to 3-1/2 inches long, remaining close together, forming compact yet delicate heads; the stems sometimes lying almost flat but usually ascending from the prostrate main body of the plant (24).

#### Propagation:

By seed and runners.

#### Habitat:

Found in moist areas at low to medium elevations. A weed in lawns and cultivated areas.

---

#### History:

Native to Taiwan. First collected in Hawaii in 1932.

#### Notes:

Spreads rapidly, crowding out other grasses and larger plants. Palatable to livestock.

---



## GRAMINEAE (GRASS FAMILY)

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*Digitaria pruriens* (Fisch. ex Trin.) Buse

Synonyms: *Panicum pruriens* Fisch. ex Trin.; *Paspalum sanguinale* (L.)

Lam.; *Syntherisma pruriens* (Trin.) Arthur; *D. consanguinea* Gaud.; *S.*

*consanguinea* (Gaud.) Skeels

---

### SLENDER CRABGRASS

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#### Description:

Plants slightly creeping at base, 1 to 3 feet high. **Stems** smooth. **Leaves** 3 to 6 inches long, 1/8 to 7/16 inch wide, smooth on both surfaces except at the base. **Leaf sheaths** covered with hairs. **Flowering heads** with erect racemes, scarcely spreading, even at maturity (22).

#### Propagation:

By seed and runners.

#### Habitat:

Thrives in shady woods and moist regions up to 6,000 feet; stunted in arid regions. A weed in cultivated areas and wastelands.

---

#### History:

First described from Hawaii and the Marquesas Islands; now found throughout Polynesia.

#### Note:

Palatable to livestock.

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## GRAMINEAE (GRASS FAMILY)

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*Digitaria sanguinalis* (L.) Heist. in Scop.

Synonyms: *Panicum sanguinale* L., *Syntherisma sanguinalis* (L.) Dulac,  
*Paspalum sanguinale* (L.) Lam.

---

### LARGE CRABGRASS, HAIRY CRABGRASS

---

#### Description:

A weedy annual, sometimes perennial, branching and spreading, often rooting at the joints and sometimes forming extensive mats, occasionally assuming an upright habit. **Stems** 1 to 3 feet long. **Leaf sheaths** clothed with long, rather stiff hairs, often purplish. **Leaves** 2 to 6 inches long, 1/4 to 1/2 inch wide, rough to the touch and usually clothed with stiff hairs. **Flowering heads** on upright or sometimes almost prostrate stems with five to ten slender, spreading, fingerlike branches, 2 to 6 inches long (24).

#### Propagation:

By seed and runners. A single flowering stem produces hundreds of seeds.

#### Habitat:

Found in moist regions at lower elevations. A serious weed in cultivated fields, lawns, and waste areas; a forage grass in pastures.

---

#### History:

Native to Europe. Accidentally introduced to Hawaii; first collected about 1864.

---



## GRAMINEAE (GRASS FAMILY)

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*Digitaria violascens* Link

Synonyms: *D. chinensis* (Nees) A. Camus, *Panicum violascens* (Link) Kunth, *P. minutiflorum* Steud., *P. chinensis* Nees in H. & A., *Syntherisma chinensis* (Nees) Hitchc., *S. Helleri* Nash

---

### SMOOTH CRABGRASS, VIOLET CRABGRASS

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#### Description:

An annual, sometimes perennial, 1 to 2 feet high, erect to spreading at the base and forming dense clumps. **Stems** smooth. **Leaves** flat, 1 to 4 inches long, 1/8 to 1/4 inch wide, often reddish, usually smooth but often slightly rough on the edges and sometimes with a few long hairs near the base on the upper sides. **Flowering heads** with two to nine slender fingerlike branches, 1 to 4 inches long, at the tip of the flowering stem or closely arranged along 1 to 2 inches of the upper part. **Spikelets** very small, dark-colored, closely pressed to the branches (24).

#### Propagation:

By seed. A single flowering stem can produce hundreds of seeds, which are easily brushed off at maturity.

#### Habitat:

Fairly abundant in moist and semi-dry regions to an elevation of 5,000 feet or more. A weed in cultivated areas and lawns.

---

#### History:

Native to China, India, and Australia. First collected in Hawaii around 1900.

#### Note:

Very palatable, fairly persistent, and withstands heavy grazing.

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## GRAMINEAE (GRASS FAMILY)

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*Echinochloa colona* (L.) Link

Synonyms: *Panicum colonum* L.; *P. crusgalli* (L.) Beauv.

---

### JUNGLE-RICE

---

#### Description:

A smooth annual, 1/2 to 2 feet high, usually prostrate-spreading, sometimes nearly erect. **Stems** flattened, often reddish-purple, usually swollen at the joints. **Leaves** flat, 1 to 4 inches long, 1/8 to 1/4 inch wide, rather broad at the base and tapering abruptly to a sharp point. **Flowering heads** 2 to 4 or sometimes as much as 6 inches long, with very short, compact branches, green or tinged with reddish-purple (24).

#### Propagation:

By seed. Grows quickly during the rainy season; dies out with the coming of the dry season.

#### Habitat:

Found in very moist, swampy areas and sometimes in dry, open areas at low elevations. A problem weed in irrigated areas and along roadsides.

---

#### History:

Native to India. First collected in Hawaii about 1861.

#### Note:

Of little forage value.

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## GRAMINEAE (GRASS FAMILY)

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*Echinochloa crusgalli* (L.) Beauv.

Synonyms: *Panicum crusgalli* L.; *P. crusgalli*, var. *longisetum* Trin.

---

### BARNYARD GRASS

---

#### Description:

A stout annual, 1 to 4 feet high, often spreading and prostrate at the base. **Leaves** smooth, 3/8 to 5/8 inch wide. **Leaf sheath** smooth. **Flowering heads** 3 to 10 inches long with short branches at the base. **Florets** covered with stiff bristles and tipped with a long hair (1, 13).

#### Propagation:

By seed.

#### Habitat:

Grows in wet and in dry regions. A weed in low, flat cultivated areas, in waste places, and along roadsides.

---

#### History:

Native to Europe. First collected in Hawaii in 1864.

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## GRAMINEAE (GRASS FAMILY)

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*Eleusine indica* (L.) Gaertn.

Synonyms: *Cynosurus indicus* L., *E. gracilis* Salisb., *Cynodon indicus* (Gaertn.) Rasp., *E. polydactyla* Steud.

---

### WIREGRASS, GOOSEGRASS

---

#### Description:

An erect to prostrate annual, or perennial, 1 to 2 feet high, usually growing in tufts and profusely branched at the base.

**Stems** flattened, pale green, shining, smooth or sometimes with a few long hairs along the edges. **Leaves** 6 to 10 inches long, boat-shaped, long-hairy at the base, narrow. **Flowering heads** with two to six flattened, fingerlike branches, 2 to 4 inches long. **Seeds** about 1/16 inch long, dark reddish-brown with conspicuous ridges (24).

#### Propagation:

By seed.

#### Habitat:

Found in all areas; thrives in poor soil and areas exposed to trampling. A problem weed in cultivated areas, lawns, pastures, and waste places.

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#### History:

Native to India. First collected in Hawaii in 1840.

---



## GRAMINEAE (GRASS FAMILY)

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*Eragrostis cilianensis* (All.) Vignolo-Lutati

Synonyms: *E. major* Host, *E. megastachya* (Koel.) Link, *Poa cilianensis* All.

---

### STINKGRASS

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#### Description:

An annual, 1/2 to 2 feet high. **Stems** smooth, erect or often spreading, the foliage beset with glands emitting a disagreeable odor, whence the name "stinkgrass". **Leaves** flat, 2 to 5 inches long, 1/8 to 3/8 inch wide, dark green. **Flowering heads** 2 to 10 inches long, compact or somewhat open, dark green when young, whitish when old (24).

#### Propagation:

By seed. Springs up after rains, producing seeds profusely within a month or so.

#### Habitat:

Found in dry, sandy areas at lower elevations. A weed in waste areas, lawns, and along roadsides.

---

#### History:

Native to Europe. First collected in Hawaii in 1864.

#### Notes:

When fresh, gives off a strong odor. May be poisonous to horses and cattle if it is eaten in large quantities.

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## GRAMINEAE (GRASS FAMILY)

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*Eragrostis pectinacea* (Michx.) Nees

Synonyms: *E. caroliniana* (Spreng.) Scribn., *Poa caroliniana* Spreng., *P. pectinacea* Michx.

---

### CAROLINA LOVEGRASS, PECTINATE LOVEGRASS

---

#### Description:

An annual, 1/2 to 2 feet high. **Stems** usually erect but sometimes spreading at base, smooth, often purplish at the base. **Leaves** 2 to 7 inches long, 1/16 to 1/8 inch wide, slightly rough on the upper sides, smooth on the lower. **Flowering heads** 2 to 7 inches long, 1 to 3 inches wide, rather delicate. **Seeds** small, about 1/32 inch long, reddish-brown (24).

#### Propagation:

By seed.

#### Habitat:

Occasionally found in dry regions at lower elevations. A weed in pastures, cultivated areas, lawns, and along roadsides.

---

#### History:

Native to the U.S. Mainland. First collected in Hawaii in 1906.

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## GRAMINEAE (GRASS FAMILY)

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*Eragrostis tenella* (L.) Beauv. ex R. & S.

Synonyms: *E. amabilis* (L.) Wight & Arn. ex Nees ex H. & A., *Poa amabilis* L., *P. tenella* L.

---

### LOVEGRASS, HAKONOKONO

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#### Description:

A small, rather delicate annual, usually widely spreading at the base but sometimes erect. **Stems** 1/2 to 1-1/2 feet long, delicate but rather wiry. **Leaves** 1-1/2 to 4 inches long, 1/16 to 1/4 inch wide, slightly rough on the upper surfaces, smooth on the lower, with tufts of long hairs at the summits of the sheaths. **Flowering heads** 2 to 6 inches long, rather delicate, with short branches and numerous spikelets, often reddish-purple (24).

#### Propagation:

By seed. Grows quickly.

#### Habitat:

Usually found in rather dry regions at lower elevations. A weed in waste places, along roadsides, and in lawns.

---

#### History:

Native to India. First collected in Hawaii in 1888.

#### Note:

Springs up after rain, forming an important forage.

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## GRAMINEAE (GRASS FAMILY)

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*Melinis minutiflora* Beauv.

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### MOLASSES GRASS

---

#### Description:

A branching, spreading perennial, 1 to 3 feet high; foliage with sticky hairs. **Leaves** 4 to 8 inches long, flat. **Nodes** with tufts of long silky hairs. **Stems** rather coarse. **Flowering heads** 6 to 10 inches long, narrow but loose; spikelets about 1/12 inch long with a slender bristle about 1/2 inch long (24).

#### Propagation:

By seed and by prostrate stems.

#### Habitat:

Found in dry to moderately moist regions at middle elevations. A weed in wastelands, especially in poor soil.

---

#### History:

Native to Africa. Introduced to Hawaii in 1913.

#### Notes:

Considered a good forage grass. When fresh, it has a heavy sweet odor similar to molasses.



## GRAMINEAE (GRASS FAMILY)

---

*Panicum maximum* Jacq.

---

### GUINEA GRASS

---

#### Description:

A robust perennial, 3 to 7 feet tall, in large bunches with very short, thick rootstalks. **Stems** stout, somewhat flattened, with long hairs at the swollen joints. **Leaves** 10 to 30 inches long, 1/2 to 1 inch wide, usually erect, yellowish-green, very rough on the edges and usually with long stiff hairs at the base on the upper sides. **Flowering heads** 8 to 20 inches long, 3 to 6 inches wide, with stiffly ascending branches 4 to 8 inches long (24).

#### Propagation:

By seed and underground stems.

#### Habitat:

Found in dry regions at lower elevations. Planted in pastures for forage; considered a major problem weed in cultivated areas and along roadsides.

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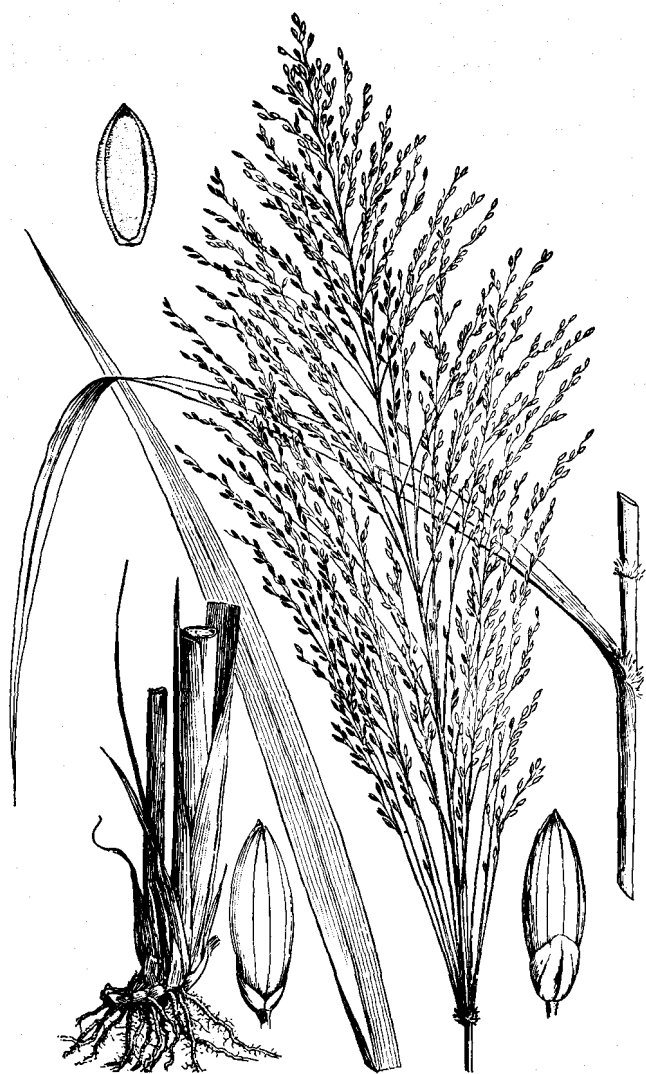
#### History:

Native to Africa. Accidentally introduced to Hawaii about 1870-1880.

#### Notes:

Withstands long periods of drought. Young plants very palatable and nutritious.

---



## GRAMINEAE (GRASS FAMILY)

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*Panicum repens* L.

---

### TORPEDO GRASS, WAINAKU GRASS

---

#### Description:

A spreading, long-lived perennial, 1 to 3 feet high, upright, with many underground stems; base covered with smooth scales.

**Leaves** 2 to 6 inches long, 1/8 to 1/4 inch wide, slightly hairy on the upper surfaces, smooth on the lower. **Flowering head** a panicle, 3 to 5 inches long, the branches ascending. **Spikelets** about 1/8 inch long, oval (24).

#### Propagation:

By stout, creeping underground stems.

#### Habitat:

Thrives best in wet regions. A weed in cultivated areas and along roadsides.

---

#### History:

Native to the Old World. First collected in Hawaii in 1906.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Considered the worst grass pest in crop lands; extremely difficult to control. A poor forage grass.

---



## GRAMINEAE (GRASS FAMILY)

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*Panicum torridum* Gaud.

Synonym: *P. cinereum* Hbd.

---

### TORRID PANIC GRASS, KAKONAKONA

---

#### Description:

A rather robust annual, 1 to 2 feet high, densely covered with long silky, yellowish hairs. **Stems** erect or sometimes slightly bent at the base, sometimes freely branching.

**Leaves** flat, 2 to 8 inches long, 1/4 to 1/2 inch wide, tapering to a sharp point, densely velvety. **Flowering heads** 2 to 6 inches long, rather dense and compact, densely covered with long hairs (24).

#### Propagation:

By seed.

#### Habitat:

Abundant in arid regions at low elevations. A weed in waste places.

---

#### History:

Endemic to Hawaii, not known elsewhere.

#### Note:

Valuable as forage.

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## GRAMINEAE (GRASS FAMILY)

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*Paspalum conjugatum* Berg.

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### HILO GRASS

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#### Description:

A persistent perennial, extensively creeping by leafy stems rooting at the joints; runners flattened, hairy at the joints, often reddish-purple. **Leaves** 2 to 5 inches long, 1/4 to 1/2 inch wide, thin, pale yellowish-green, abruptly tapering to a sharp point, rough on the edges. **Flowering stems** 10 to 25 inches long, erect from the creeping base, with two or sometimes three widely spreading racemes 2 to 4 inches long. **Spikelets** about 1/32 inch long, flat, silky-hairy on the edges (24).

#### Propagation:

By seed and runners. Spreads rapidly.

#### Habitat:

Thrives in wet regions from sea level to about 6,000 feet; will grow in shade and on poor acid soils. A persistent weed in cultivated areas and lawns.

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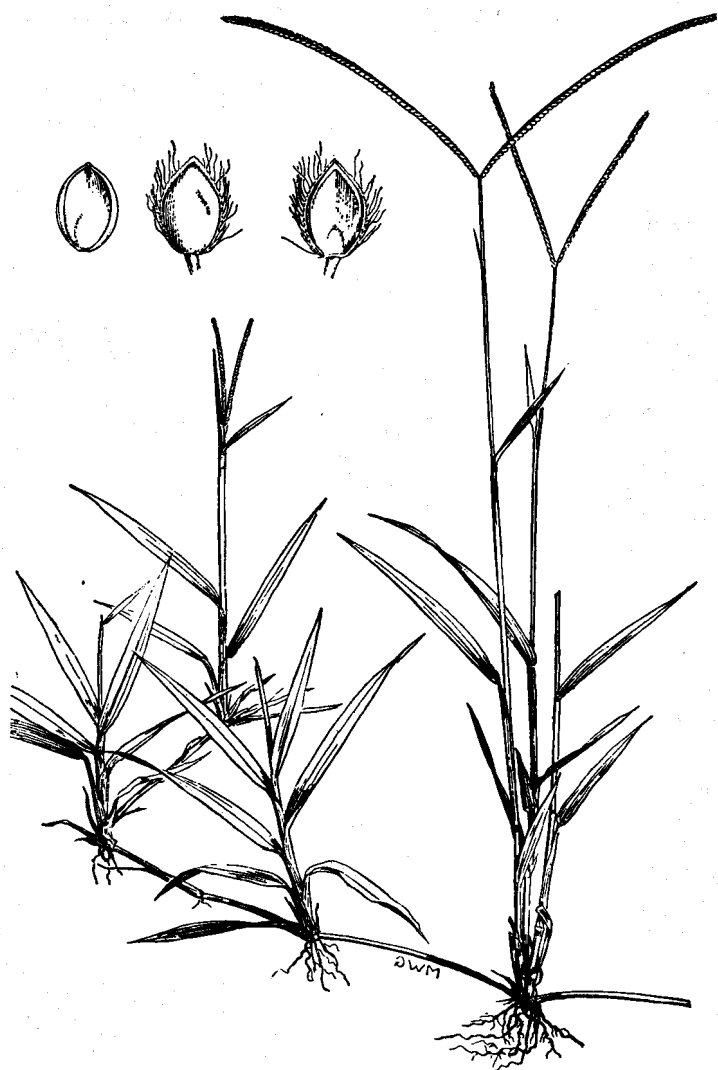
#### History:

Native to tropical America. First noted near Hilo, Island of Hawaii, about 1840.

#### Notes:

Of little forage value; mature plants unpalatable. Forms a thick ground cover, crowding out tree seedlings and the more desirable pasture grasses. It is used as a lawn grass in some high-rainfall areas.

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## GRAMINEAE (GRASS FAMILY)

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*Paspalum dilatatum* Poir.

---

### DALLIS GRASS, PASPALUM

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#### Description:

A perennial, 1 to 4 feet high, growing in large leafy bunches or sometimes forming a rather dense sod. **Stems** usually slightly bent at the base, becoming erect or almost erect, smooth or hairy near the base, sometimes rooting at the lower joints.

**Leaves** flat, 4 to 8 inches long, 1/4 to 1/2 inch wide, dark green, rough on the edges, usually with sparse tufts of long rather stiff hairs at the base. **Flowering stems** usually well above the leafy base with three to five spreading racemes, 2 to 3 inches long, on an axis 2 to 4 inches long. **Spikelets** crowded, about 1/8 inch long, flat, with a fringe of long silky hairs around the edges (24).

#### Propagation:

By seed.

#### Habitat:

Found from sea level to about 5,000 feet; thrives in rather moist, open regions and grows fairly well in semi-dry regions. A weed in cultivated areas, in lawns, and along roadsides.

---

#### History:

Native from Brazil to Argentina. Introduced for forage from Australia to Hawaii about 1906.

#### Note:

Very palatable and withstands heavy grazing.



## GRAMINEAE (GRASS FAMILY)

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*Paspalum fimbriatum* HBK.

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### PANAMA PASPALUM, FIMBRIATE PASPALUM

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#### Description:

A sparingly tufted, pale yellowish-green annual, 12 to 24 inches high. **Stems** erect, hairless. **Leaf sheaths** 1-1/2 to 2-1/2 inches long, compressed, bristly, the basal ones often purple. **Leaves** flat, 3 to 8 inches long, 7/32 to 5/8 inch wide, fringed with short stiff hairs, margins wavy, with a tuft of long hair at base on upper rough surface. **Flowering head** a raceme with stiff hairs at the base, 1 to 2 inches long, ascending and alternate on a slender compressed axis 2-1/2 to 4 inches long. **Spikelets** 1/8 inch long, usually tinged with reddish-purple, circular to oval, hairless, early deciduous. **Seed** 1/16 inch long, 1/16 inch wide, compressed, oval, whitish (5).

#### Propagation:

By seed. Plants spring up immediately after rains. Spikelets cling to clothing and fur.

#### Habitat:

Prefers moist, open regions. A weed in cultivated areas, in lawns, and along roadsides.

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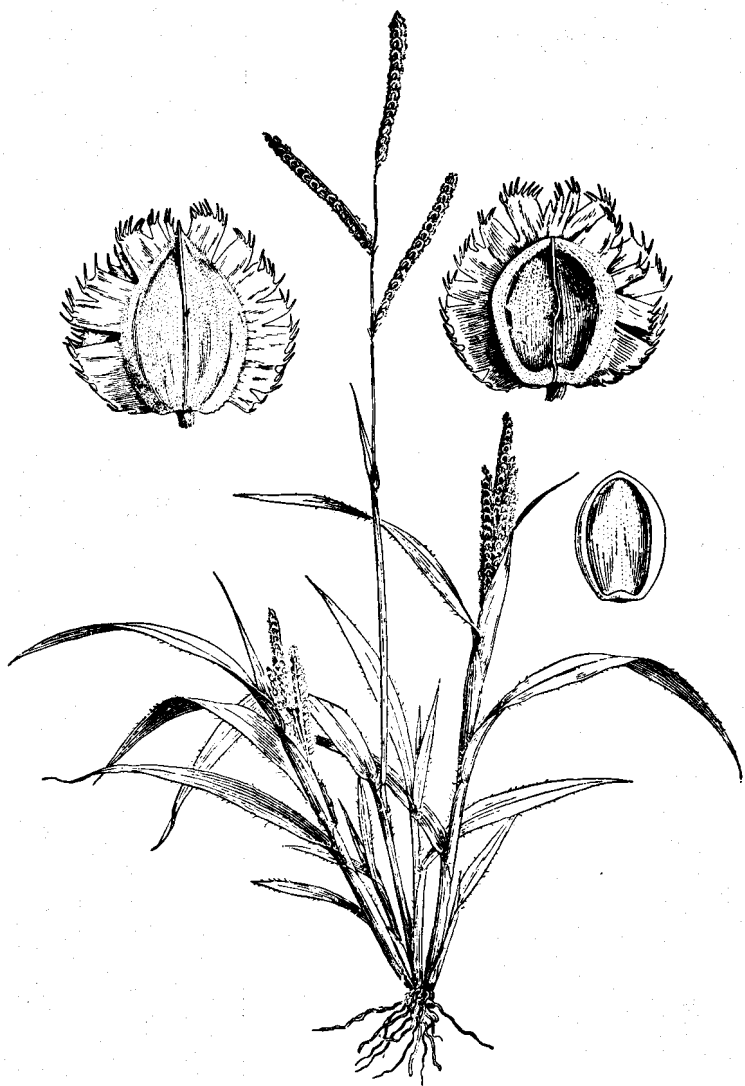
#### History:

Native to tropical America. First collected in Hawaii in 1906.

#### Notes:

Of some value as early forage grass. A prolific seeder.

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## GRAMINEAE (GRASS FAMILY)

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*Paspalum orbiculare* Forst. f.

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### RICE GRASS

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#### Description:

A bunchy, coarse, erect perennial, 2 to 4 feet high. **Stems** smooth, very tough, usually slightly swollen and often purplish at the base, slightly flattened. **Leaves** 4 to 16 inches long, 1/4 to 1/2 inch wide, flat, abruptly tapering to a sharp, rather stiff point, harsh and rather leathery, stiff and erect, rough on the edges, bluish-green on the upper sides, sometimes with wavy edges.

**Flowering stems** naked below, with 4 to 6 racemes 3/4 to 1-1/2 inches long, spreading. **Spikelets** flat, roundish, reddish-brown when mature (24).

#### Propagation:

By seed.

#### Habitat:

Found in wet regions at lower to middle elevations, growing well on rocky slopes and on heavy clay soil where few grasses can grow. A weed in pastures, rangelands, and cultivated areas, especially in irrigation and drainage ditches.

---

#### History:

Found throughout Polynesia, Australia, Malaysia, and southern China. Either native to Hawaii or of very early introduction.

#### Notes:

Rice grass is persistent, has a tough root system, and is of little value.

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## GRAMINEAE (GRASS FAMILY)

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*Paspalum Urvillei* Steud.

Synonyms: *P. Larranagai* Arech., *P. Vaseyanum* Scribn.

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### VASEY GRASS

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#### Description:

A robust, very coarse perennial, 3 to 6 feet high, growing in large bunches. **Stems** erect, smooth, with a thick rather bulbous base. **Leaf sheaths** slightly flattened, green and smooth on the upper parts, dark purple and covered with long stiff hairs on the lower parts. **Leaves** 5 to 22 inches long, 1/4 to 1/2 inch wide, coarse, tough and rather leathery, rough on the edges and with tufts of long silky hairs at the base. **Flowering heads** 6 to 14 inches long with 10 to 20 rather erect, crowded racemes, 2 to 5 inches long. **Spikelets** about 1/16 inch long, with long silky hairs along the edges (24).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas, in lawns, along roadsides, and in waste areas.

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#### History:

Native to South America. First collected in Manoa Valley, Oahu, in 1906.

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## GRAMINEAE (GRASS FAMILY)

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*Paspalum vaginatum* Swartz

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### SEASHORE PASPALUM

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#### Description:

A perennial, 4 to 24 inches high. **Leaf sheaths** generally overlapping. **Leaves** 1 to 6 inches long,  $1/20$  to  $1/5$  inch wide, tapering to a point with the margins rolled inward. **Flowering heads** fairly long, with 2 branches, initially erect but spreading or abruptly bent at maturity, 1 to 2 inches long. **Spikelets** in a row on each side of a branch, solitary,  $1/10$  to  $1/5$  inch long, ovate-lanceolate, tapering to a sharp point (17).

#### Propagation:

By seed.

#### Habitat:

Found in low-lying areas in or near brackish water.

---

#### History:

Widely distributed throughout the tropics of America and Africa. First collected in Hawaii in 1937.



## GRAMINEAE (GRASS FAMILY)

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*Pennisetum purpureum* Schumach.

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### NAPIER GRASS, ELEPHANT GRASS

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#### Description:

A rank, robust, leafy perennial, 6 to 14 feet high. **Stems** erect or often bent and spreading at the base, clothed with long, stiff, bristly hairs, very stout, tough at maturity, purplish near the base, covered with a whitish bloom.

**Leaves** 18 to 36 inches long, 3/4 to 1-1/4 inches wide, with a prominent whitish midrib, very rough on the edges, rough to the touch and often with long stiff hairs on the upper sides, especially near base and along the midrib.

**Flowering heads** narrow, spikelike, soft-bristly, yellow, 8 to 10 inches long (24).

#### Propagation:

By seed, tillers, and cuttings.

#### Habitat:

Found from sea level to 3,000 feet; thrives on deep rich soil in moist regions and grows fairly well on poor soil in dry regions. A weed in cultivated areas and wastelands.

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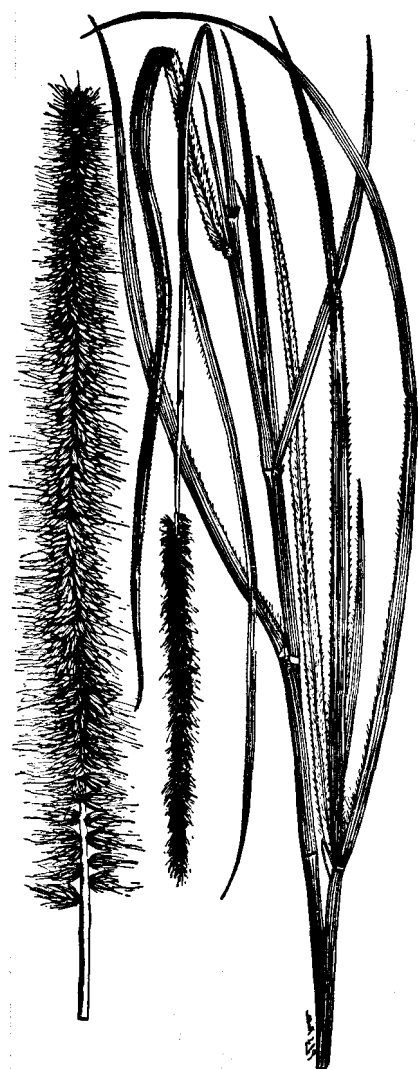
#### History:

Native to tropical Africa. Introduced to Hawaii about 1916; now widely planted for forage.

#### Notes:

Very palatable and nutritious. Has a large, deep root-system.

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## GRAMINEAE (GRASS FAMILY)

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*Pennisetum setaceum* (Forsk.) Chiov.

Synonyms: *P. asperifolium* (Desf.) Kunth, *P. Ruppelii* Steud., *Phalaris setacea* Forsk.

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### FOUNTAIN GRASS

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#### Description:

A bunchy, erect perennial, 2 to 4 feet high. **Stems** rather woody, smooth. **Leaves** more or less folded, 1-1/2 to 2 feet long, rough, rather stiff and harsh. **Flowering heads** 6 to 12 inches long, feathery, pink or purple, spikelike, nodding (24).

#### Propagation:

By seed. Seeds profusely and spreads rapidly.

#### Habitat:

Grows well in rocky, shallow soil; withstands long periods of drought. A weed in pastures, waste places, and cultivated areas.

---

#### History:

Native to Africa. Introduced as an ornamental to Hawaii, where it is grown for garden borders. First collected in 1926.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A poor forage grass which will spread into valuable pasture lands if not checked.

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## GRAMINEAE (GRASS FAMILY)

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*Pennisetum setosum* (Sw.) L. C. Rich in Pers.

Synonym: *Cenchrus setosus* Sw.

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### FEATHERY PENNISETUM

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#### Description:

An erect perennial growing in loose clumps, 2 to 5 feet high.

**Stems** usually smooth, sometimes hairy at the base. **Leaves** hairy all over, with tufts of long silky hairs at the base, 3 to 18 inches long, 1/8 to 5/8 inch wide. **Flowering heads** spikelike, feathery, yellow or purplish with soft woolly bristles (24).

#### Propagation:

By seed.

#### Habitat:

Found in rather dry regions at lower elevations. A weed in cultivated areas, wastelands, and along roadsides.

---

#### History:

Native to tropical America. Introduced to Hawaii in 1921.

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## GRAMINEAE (GRASS FAMILY)

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*Rhynchelytrum repens* (Willd.) C. E. Hubb.

Synonyms: *Saccharum repens* Willd., *Tricholaena rosea* Nees, *T. repens* (Willd.) Hitchc.

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### NATAL REDTOP

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#### Description:

An erect perennial, 2 to 3 feet high. **Stems** usually much branched, often bent at the base and sometimes rooting at the lower joints, usually bluish-green, often purplish at the joints. **Leaves** flat, 2 to 8 inches long, 1/16 to 3/16 inch wide, slightly rough on the upper sides, smooth on the lower, usually bluish-green. **Flowering heads** 3 to 6 inches long, oval, dark red to purplish when young, fading to silvery when old. **Spikelets** covered with long hairs that give a feathery appearance to the flowering heads (24).

#### Propagation:

By seed. Grows and spreads rapidly.

#### Habitat:

Found in moderately dry regions from sea level to middle elevations. Grows in rocky areas and on soil of low fertility where more valuable grasses cannot survive. A weed in cultivated areas.

---

#### History:

Native to the Cape of Good Hope. Introduced to Hawaii in 1895.

#### Notes:

Young plants are palatable and tender; mature ones become woody and tough.

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## GRAMINEAE (GRASS FAMILY)

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*Setaria glauca* (L.) Beauv.

Synonyms: *Panicum glaucum* L., *Chaetochloa glauca* (L.) Scribn., *C. lutescens* (Weig.) Stuntz, *Pennisetum glaucum* (L.) R. Br., *Panicum lutescens* Weig., *S. lutescens* (Weig.) F. T. Hubb.

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### YELLOW FOXTAIL, YELLOW BRISTLEGRASS

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#### Description:

An annual. **Stems** erect, sometimes semi-prostrate, mostly 20 to 36 inches high, compressed. **Leaf sheaths** ridged. **Leaves** often twisted, light green, 4 to 10 inches long, 1/5 to 2/5 inch wide, flat. **Flowering head** thick, brownish-yellow when mature, a spikelike panicle, 1-1/2 to 4 inches long, approximately 2/5 inch thick, axis densely hairy. **Spikelets** about 1/10 inch long, with bristles 1/5 to 3/10 inch long. **Seed** wrinkled (17).

#### Propagation:

By seed.

#### Habitat:

Grows well on wet, poor, acid soils. A weed in cultivated areas, pastures, and rangelands.

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#### History:

Native to Europe. First collected in Hawaii in 1906.

#### Note:

Mature plants unpalatable.

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## GRAMINEAE (GRASS FAMILY)

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*Setaria palmaefolia* (Koen.) Staph

Synonyms: *Panicum palmaefolium* Koen., *P. nervosum* Roxb., *P. neurodes* Schult., *Chaetochloa palmifolia* (Willd.) Hitchc. & Chase

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### PALM GRASS

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#### Description:

A perennial. **Stems** 3 to 5 feet high. **Leaf sheaths** covered with rough glandular hair. **Leaves** folded like a fan, flat, hairy, oval with rounded ends, 1 to 2 feet long, 1-1/2 to 2-1/2 inches wide. **Flowering head** a loose panicle, open, 15 inches long, compound. **Spikelets** lanceolate, sharply pointed, 1/10 to 1/8 inch long, on short branchlets lying against the main branches which bear bristles (17).

#### Propagation:

By seed.

#### Habitat:

Found in wet, shady areas. A weed in wastelands, along roadsides, and occasionally in cultivated areas.

---

#### History:

Native to India. First collected in Hawaii in 1906.

#### Note:

Cultivated in gardens.

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## GRAMINEAE (GRASS FAMILY)

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*Setaria verticillata* (L.) Beauv.

Synonyms: *Panicum verticillatum* L., *Chaetochloa verticillata* (L.) Scribn.

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### BRISTLY FOXTAIL

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#### Description:

An upright, freely branching and spreading annual, 1 to 2-1/2 feet high. **Stems** smooth. **Leaves** 3 to 8 inches long, 1/4 to 1/2 inch wide, hairy. **Flowering head** 1 to 4 inches long, bristly (24).

#### Propagation:

By seed. Germinates quickly after rains.

#### Habitat:

Found near sea level in open and shaded areas. A weed in cultivated areas, lawns, and waste places.

---

#### History:

Native to Europe and Asia. Introduced to Hawaii around 1860.

#### Notes:

Young plants furnish valuable forage in dry areas. A serious weed when mature; barbed bristles around the fruiting bodies stubbornly cling to clothing and to hair of animals.

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アラゲエノコロ



## GRAMINEAE (GRASS FAMILY)

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*Sorghum halepense* (L.) Pers.

Synonyms: *Holcus halepensis* L., *Andropogon sorghum* (L.) Brot.

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### JOHNSON GRASS

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#### Description:

A perennial. **Stems** slender to moderately stout, 18 to 48 inches high, from long underground stems. **Leaves** narrow, 6 to 20 inches long, 1/4 to 3/4 inch wide. **Flowering head** a spreading panicle, narrowly ovate to oblong, 6 to 12 inches long, 1 to 3 inches wide. **Sessile spikelets** tawny- to purple-tinged, oblong-lanceolate, about 1/5 inch long, 1/10 inch wide, slightly hairy with a short bent awn about 1/2 inch long; **stalked spikelets** pale to deep purple, lanceolate, 1/5 to 1/4 inch long (17).

#### Propagation:

By seed and by an extensive system of underground stems.

#### Habitat:

Found in all areas; prefers fertile, well-drained soils. A problem weed in cultivated areas, especially in irrigation ditches and along roadsides.

---

#### History:

Native to the Mediterranean region. Probably accidentally introduced to Hawaii; first collected in 1909.

#### Notes:

Declared **noxious** in Regulation 2. A serious weed because of its underground stems. Useful as forage, but at times poisonous to stock due to the accumulation of prussic acid and selenium.

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## GRAMINEAE (GRASS FAMILY)

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*Sporobolus africanus* (Poir.) Robyns & Tourney

Synonyms: *S. capensis* (Willd.) Kunth, non *Agrostis capensis* (L.) Lam.;  
*Agrostis africana* Poir.

---

### RATTAIL GRASS, AFRICAN DROPSEED

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#### Description:

A wiry, erect, smooth perennial, 1 to 3 feet high. **Stems** somewhat flattened, especially at the base, very tough. **Leaves** usually somewhat folded, 4 to 10 inches long, 1/16 to 3/16 inch wide at the base, gradually tapering to a fine point, tough and leathery. **Flowering heads** 6 to 10 inches long, erect, spikelike, usually covered with a black smut, and with the small red seed often sticking to the heads long after maturity (24).

#### Propagation:

By seed.

#### Habitat:

Abundant in cool, moist areas at medium and higher elevations. A weed in lawns.

---

#### History:

Native to South Africa. First collected in Hawaii in 1903.

#### Notes:

Very persistent. Young plants sometimes eaten by cattle; mature plants relatively unpalatable.

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## GRAMINEAE (GRASS FAMILY)

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*Sporobolus diander* (Retz.) Beauv.

Synonym: *Agrostis diandra* Retz.

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### INDIAN DROPSEED

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#### Description:

A perennial. **Stems** tufted, erect, from an abruptly bent base, slender, smooth, 1 to 2-1/2 feet high. **Leaves** with smooth sheaths; blades long and narrow, flat, 6 to 15 inches long, 1/32 to 1/16 inch wide. **Flowering head** a narrow panicle, fairly loose until after maturity, 4 to 15 inches long; branches ascending to spreading, the lower branches 3/4 to 1-1/2 inches long. **Spikelets** numerous, with short pedicels, 1/32 to 1/16 inch long, slightly compressed, smooth. **Seed** brown, less than 1/32 inch long (17).

#### Propagation:

By seed.

#### Habitat:

Found in pastures at low elevations. A weed in lawns and along roadsides.

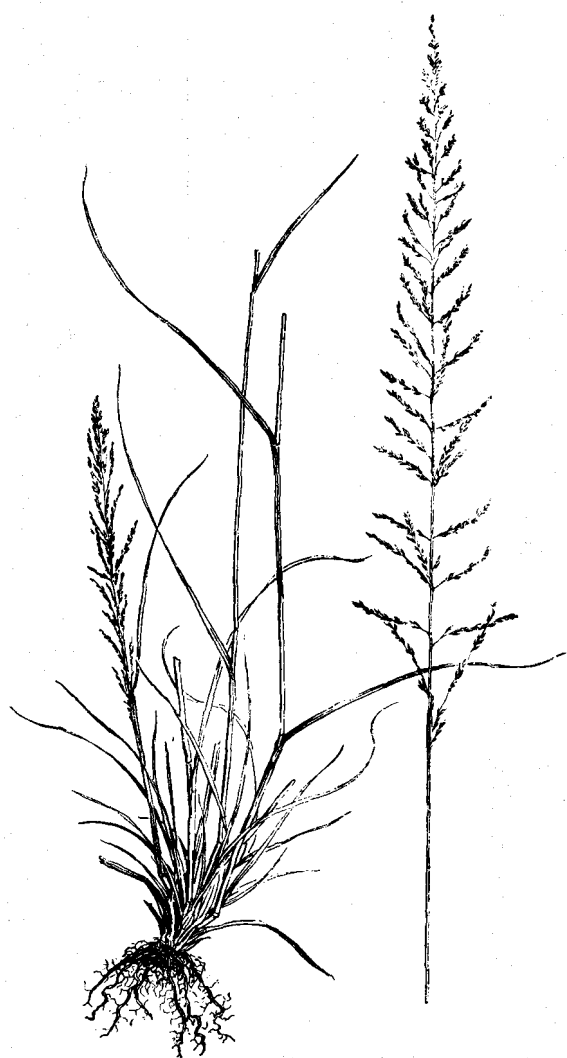
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#### History:

Native to India. First collected in Hawaii in 1906.

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## GRAMINEAE (GRASS FAMILY)

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*Sporobolus indicus* (L.) R. Br.

Synonyms: *S. Poiretii* (R. & S.) Hitchc., *Axonopus Poiretii* R. & S.,  
*S. Berteroanus* (Trin.) Hitchc. & Chase, *Agrostis indica* L.

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### SMUTGRASS

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#### Description:

A perennial. **Stems** erect, solitary or in small clumps, 1 to 3-1/2 feet high. **Leaves** flat or with edges rolled partly inward, rather firm, 1/16 to 1/4 inch wide at base, long, tapering to a fine point. **Flowering head** a panicle, usually spikelike but more or less interrupted, 3 to 16 inches long, the branches of the inflorescence lying against the main axis or ascending. **Spikelets** about 1/16 inch long (10).

#### Propagation:

By seed.

#### Habitat:

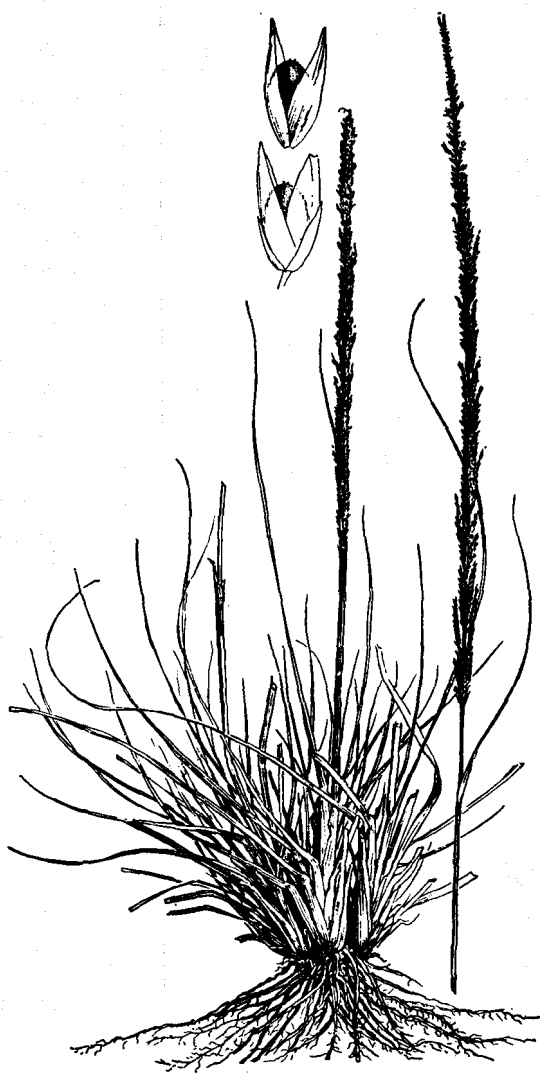
Found in cool, moist areas at medium to higher elevations. A weed in lawns.

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#### History:

Native to tropical Asia. First collected in Hawaii in 1936.

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## GRAMINEAE (GRASS FAMILY)

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*Stenotaphrum secundatum* (Walt.) Ktze.

Synonym: *Ischaemum secundatum* Walt.

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### ST. AUGUSTINE GRASS, BUFFALO GRASS

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#### Description:

A smooth perennial with creeping runners, rooting at the joints. **Stems** branched, pale green at the base, flattened, the flowering ones somewhat upright, 4 to 12 inches high. **Leaves** stiff, usually rather leathery, short, broad and rounded at the tips. **Flowering heads** spikelike, flat, single at the tips of the stems, with the spikelets sunken in the corky axis (24).

#### Propagation:

By runners and cuttings. Rarely seeds in Hawaii.

#### Habitat:

Found from sea level, where it is partially tolerant to salt, to about 3,000 feet. Thrives in dry, open and shaded areas. A weed in lawns and wastelands.

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#### History:

Native to the southeastern states of the U.S. Mainland. Probably accidentally introduced to Hawaii; first collected in 1816.

#### Notes:

Used for lawns, especially where it is too shady for Bermuda grass.

---



## GRAMINEAE (GRASS FAMILY)

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*Stipa cernua* Stebbins & Love

---

### NEEDLEGRASS

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#### Description:

A tufted perennial, 2 to 3 feet high, in rather large clumps.

**Basal leaves** numerous, very narrow,  $3/64$  to  $3/32$  inch wide, covered with a blue-green waxy coating. **Flowering head** an open panicle with slender branches. **Spikelets**  $3/8$  to  $3/4$  inch long, with a sharp-pointed, densely bearded base; the awn,  $2-1/2$  to  $4-1/4$  inches long (10).

#### Propagation:

By seed.

---

#### History:

Native to the foothills of Sierra Nevada and Coast Ranges of California. Of very recent introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. May be a pest in range-lands because the long, needlelike awns can injure cattle.

---



## GRAMINEAE (GRASS FAMILY)

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*Tricachne insularis* (L.) Nees

Synonyms: *Andropogon insularis* L., *Valota insularis* (L.) Chase

---

### SOUR GRASS

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#### Description:

An upright perennial, 3 to 5 feet high, spreading at the base and growing in a bunch, stooling very freely. **Stems** tough, somewhat bulbous at the base, usually clothed with long stiff hairs. **Leaves** flat, 8 to 20 inches long, 1/2 to 3/4 inch wide, upper surfaces rough to the touch with depressed midrib, lower surfaces smooth with prominent midrib. **Flowering head** 8 to 11 inches long, dense, narrow, silky, with many slender, rather drooping branches 3 to 5 inches long (24).

#### Propagation:

By seed and runners. Produces large quantities of viable, hairy seeds which are dispersed by wind for considerable distances.

#### Habitat:

Abundant in dry regions at lower elevations, but is spreading gradually up the slopes into moister zones. A weed in pastures, rangelands, and cultivated areas, especially in pineapple fields.

---

#### History:

Native to tropical and subtropical America. Introduced to Hawaii from Puerto Rico. First collected in 1906.

#### Notes:

Declared **noxious** for State land leases. Once established, it spreads rapidly and forms almost solid stands. Avoided by livestock.

---





## CYPERACEAE (SEDGE FAMILY)

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*Cyperus brevifolius* (Rottb.) Hassk.

Synonym: *Kyllingia brevifolia* Rottb.

---

### KYLLINGA, GREEN KYLLINGA

---

#### Description:

A perennial. **Underground stems** horizontal, creeping, with reddish-brown scales, up to 10 inches long. **Leaves** grasslike, soft, smooth, rising at intervals from underground stem, some 6 inches long. **Flower stem** surrounded by 1 to 4 leaves, slender, 2-1/2 to 24 inches long, and may have three or four narrow, leafy bracts at the top. **Flowering heads** develop between the bracts, dense, oval or rounded, green, with 1-flowered spikelets (15).

#### Propagation:

By seed and creeping underground stems.

#### Habitat:

Found especially in wet areas. A weed in open waste places, pastures, rangelands, and lawns.

---

#### History:

Found in warmer regions of the world.

---



## CYPERACEAE (SEDGE FAMILY)

---

*Cyperus esculentus* L.

---

### YELLOW NUTSEDEGE

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#### Description:

A perennial with numerous underground stems ending in small tubers. **Stems** 8 inches to 3 feet high, stoutish. **Leaves** several, equalling the stem or slightly shorter, rarely longer, 1/6 to 1/3 inch wide; bracts exceeding the inflorescence. **Inflorescence** an open umbel; branches 1/2 to 4 inches long; spikelets very numerous, crowded, spreading very far apart, brownish straw-colored, linear, 1/3 to 1 inch long, scarcely compressed. **Fruit** an achene, oblong, obtuse (3).

#### Propagation:

By underground stems and by nutlike tubers which are distributed with soil. Does not appear to set seed in Hawaii.

#### Habitat:

Found in moist fields and banks of rivers and ditches.

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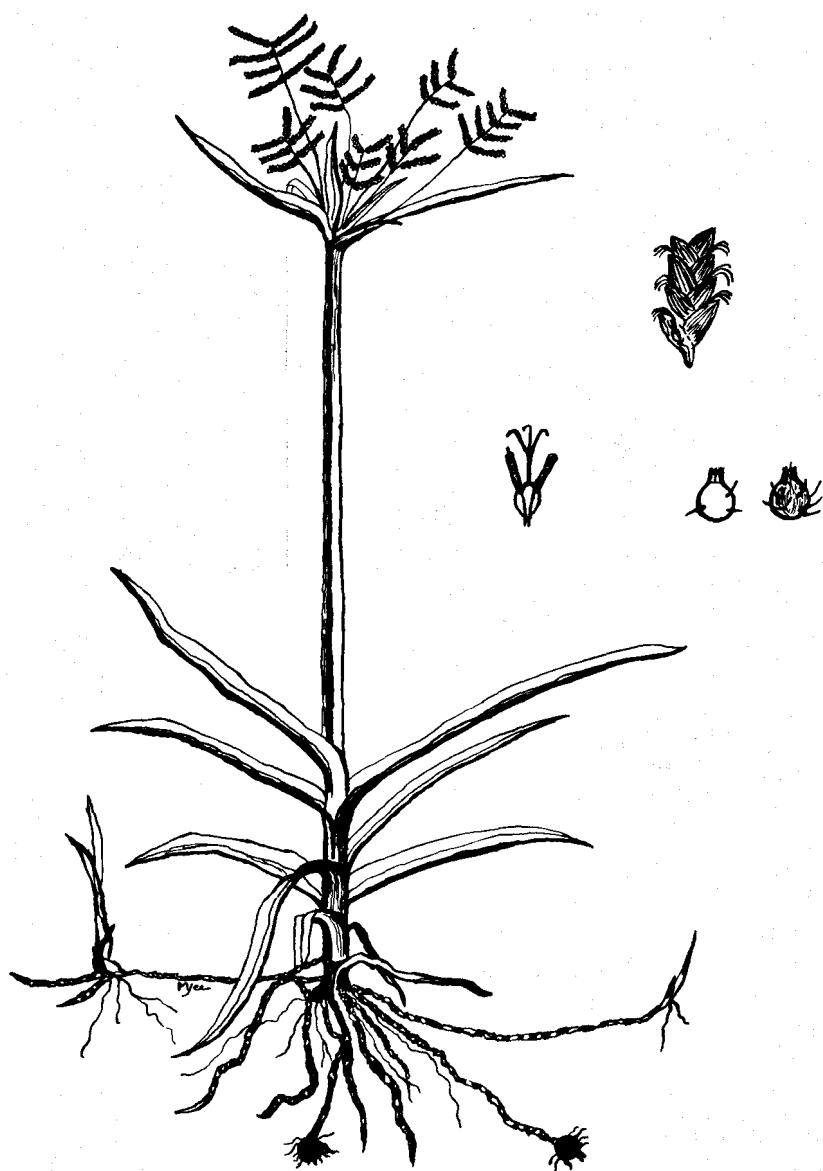
#### History:

Native to North America and Eurasia. Probably of accidental introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Spreads fast. Underground tubers make it difficult to control.

---



## CYPERACEAE (SEDGE FAMILY)

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*Cyperus hypochlorus* Hbd.

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### CYPERUS

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#### Description:

An upright perennial, 1 to 3 feet high. **Leaves** narrow, flat, and with rough edges; summit leaves 1 to 3. **Inflorescence** a terminal umbel; the branches each contain a number of brown spikelets which are flattened, 2-bristled, 8- or 10-flowered. **Fruit** an achene, slim, 3-angled, pointed (20).

#### Propagation:

By seed.

#### Habitat:

Common in moist regions up to about 1,000 feet.

---

#### History:

Found in North and South America and in many Pacific islands. Of very early introduction to Hawaii.

#### Notes:

Spreads rapidly. Plants of this species vary greatly, depending on environmental conditions.



## CYPERACEAE (SEDGE FAMILY)

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*Cyperus javanicus* Houtt.

Synonyms: *C. caricifolius* H. & A., *C. pennatus* Lam.

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### MARSH CYPERUS

---

#### Description:

A perennial, 1 to 3 feet high. **Stems** upright from a stout, creeping underground stem. **Leaves** often longer than the flowering stem, 1/4 to 1/2 inch wide, flat, very rough along the margins and on the under surface. **Flower clusters** in umbels; branches many, each 1-1/2 to 2-1/2 inches long, stiff-spreading, with some deflecting downward; involucre leaves 6 to 9 inches long, the longest 1 to 2 feet. **Spikelets** brownish, ovate-lanceolate, about 1/4 inch long, flat at first but plump toward maturity. **Seeds** dark brown, nearly 1/2 inch long (20).

#### Propagation:

By seed and underground stems.

#### Habitat:

Found in moist lowland regions -- in or near marshes and taro patches. A weed in pastures, rangelands, and waste places.

---

#### History:

Found in southern Asia, Australia, and most Pacific islands.

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## CYPERACEAE (SEDGE FAMILY)

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*Cyperus Kyllingia* Endl.

Synonym: *Killingia monocephala* Rottb.

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### WHITE KYLLINGA

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#### Description:

A smooth plant, with creeping underground stems. **Leaves** many, short; leaf sheaths thin, membranous, pale to purplish.

**Flower stems** often 3 to 18 inches high, ridged, soft, with three to four dark brown leafy bracts at the top. **Spike** 1 (rarely 2 to 3), ovoid to round, 1/4 inch in diameter; spikelets white, numerous, 1- to 2-flowered; flower scales membranous, strawlike. **Fruit** a nut, brown (6).

#### Propagation:

By seed and underground stems.

#### Habitat:

A weed in waste and grassy places. Occasionally used as a lawn grass in shady areas.

---

#### History:

Native to the tropics of both hemispheres, particularly found in Asia.

#### Note:

There is a smaller variety, *C. kyllingia* var. *humilis* (Boeck.) Kük., with flower stems 2 to 3 inches high.

---



## CYPERACEAE (SEDGE FAMILY)

---

*Cyperus rotundus* L.

---

### PURPLE NUTSEDGE

---

#### Description:

A perennial, with scaly, tuber-bearing, underground stems.

**Stems** triangular, 6 to 18 inches high, rising out of a rather tough cylindrical column of leaf sheaths (this being the leading specific character determining the species). **Leaves** of young plant upright, penetrating, spreading in later growth; involucre leaves 3 or 4, at the top of the stem. **Inflorescence** a simple umbel; branches 4 to 6 in number, slender, up to 2-1/2 inches long, each ending in a cluster of brown, narrow spikelets. **Fruit** an achene, 3-angled (15, 20).

#### Propagation:

By underground stems and tubers. Does not appear to set seed in Hawaii.

#### Habitat:

A weed in cultivated areas and lawns.

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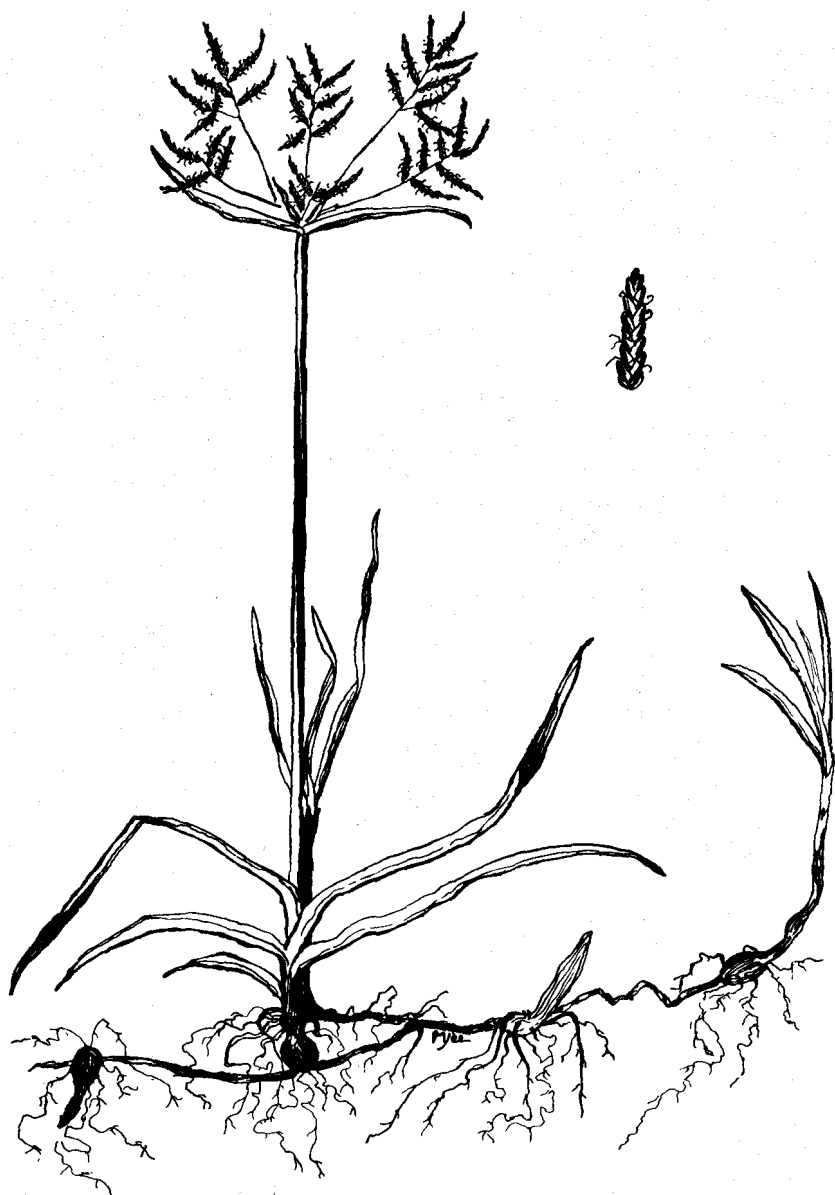
#### History:

Widely distributed over tropical and subtropical regions. Known in Hawaii since 1850.

#### Notes:

Declared **noxious** in Regulation 2. Spreads rapidly. Underground tubers make it difficult to control.

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## CYPERACEAE (SEDGE FAMILY)

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*Fimbristylis dichotoma* (L.) Vahl

Synonyms: *F. diphylla* (Retz.) Vahl; *F. polymorpha* Boeck.; *Scirpus dichotomus* L.; *S. annuus* All.; *S. diphylla* Retz.

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### TALL FRINGE-RUSH, FIMBRISTYLIS

---

#### Description:

A grasslike plant, 9 to 18 inches high; basal portion short and tufted; roots fibrous, black and wiry. **Stem** angular.

**Leaves** about half as long as the entire plant, nearly 1/8 inch wide, flat, smooth, and margins roughened with little points; leafy bracts at the stem top slightly longer than the flower stalks. **Inflorescence** a cluster of brown spikelets, some of which are borne on a short stalk, others sessile; stamens 1; style fringed with fine hairs, 2-branched at tip.

**Fruit** an achene, very small, almost sessile, lens-shaped, obovate, pale, marked with tiny dotted ridges from tip to base (20, 22).

#### Propagation:

By seed.

#### Habitat:

Found in moist regions. A weed in pastures, rangeland, and waste areas.

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## ARACEAE (ARUM FAMILY)

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*Caladium* spp.

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### CALADIUM

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#### Description:

Perennial herbs. **Leaves** in a cluster, long- or short-stemmed; blade ovate to oblong, but commonly more or less heart-shaped, net-veined, and joined at its margin or within to the stem.

**Inflorescences** inconspicuous, equaling the leaves or not, consisting of a whitish, tubular flower bract, constricted near the middle, more or less persistent, but eventually ruptured by the many-seeded white berries; the bract surrounds a flower spike bearing male flowers above, one or more rows of sterile flowers near the middle, female flowers from there to the base (15).

#### Propagation:

By seed, underground stems, and tubers.

#### Habitat:

Thrive in rich, moist soil in partly shady areas. Weeds in cultivated areas.

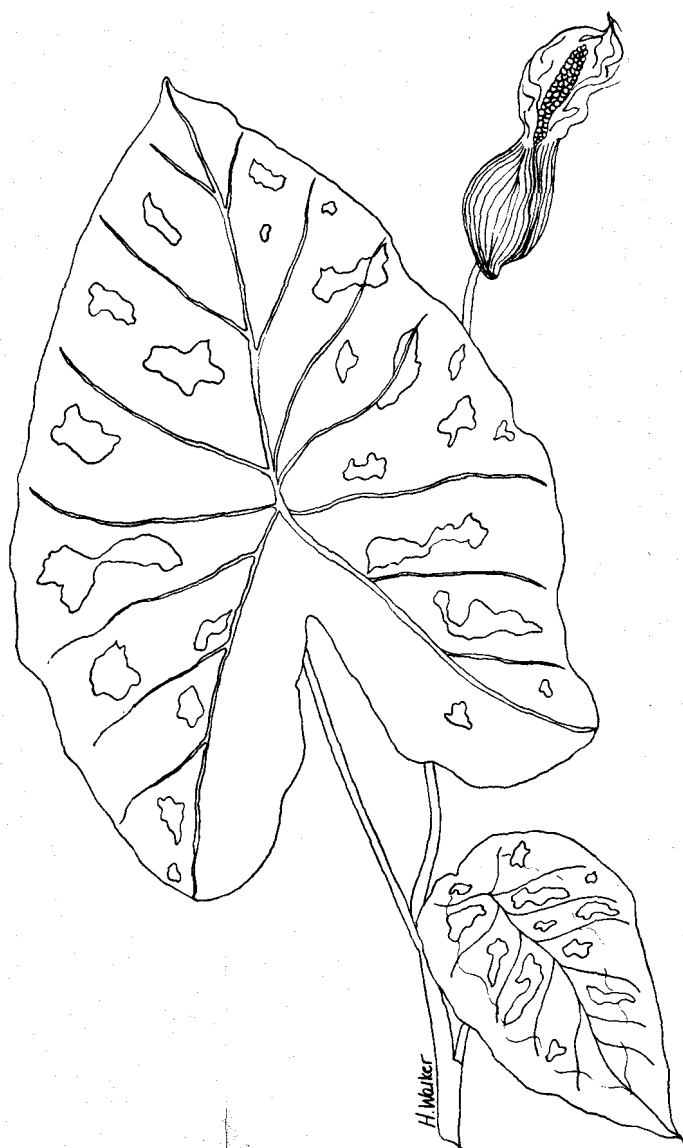
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#### History:

Native to tropical America.

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## COMMELINACEAE (SPIDERWORT FAMILY)

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*Commelina diffusa* Burm. f.

Synonym: *C. nudiflora* sensu Hbd., non L., which is *Aneilema nudiflora* (L.) Wall.

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### HONOHONO, DAY FLOWER, WANDERING JEW

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#### Description:

A creeping, freely branching plant. **Stem** fleshy, rooting at the nodes. **Leaves** 1-1/2 to 2-1/2 inches long, 1/2 to 1 inch wide, lanceolate, green, smooth on both surfaces; leaf sheath 1/2 to 1 inch long, thin, membranous, with a few hairs at the throat.

**Flowers** deep blue, about 1/4 inch across, on stalks 1/2 to 1 inch long; petals 3-lobed, two large and one small, separate, smooth; calyx 3-lobed, two-thirds the length of the flower, lanceolate, separate, smooth (22).

#### Propagation:

By seed, creeping stems which root at the nodes, and cuttings.

#### Habitat:

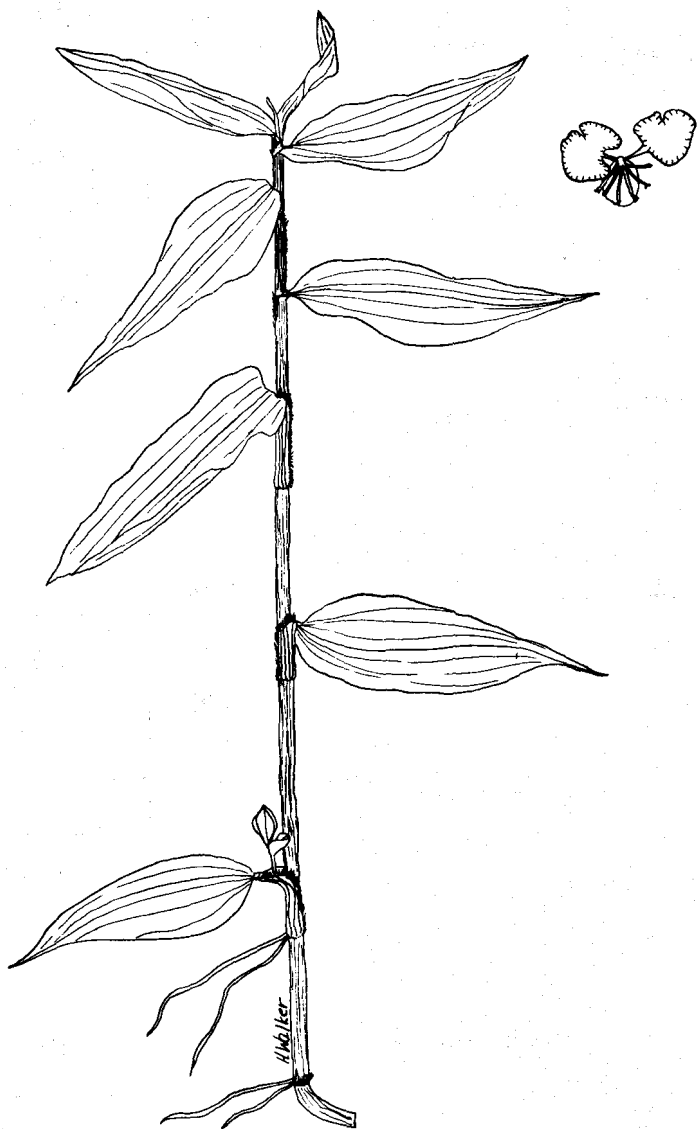
Found in moist regions. A weed in cultivated areas and waste-lands.

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#### Notes:

Grows rapidly, even in the shade. Relished by cattle.

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## IRIDACEAE (IRIS FAMILY)

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*Tritonia crocosmiflora* Nichols.

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### MONTBRETIA, PORTUGUESE LILY

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#### Description:

A slender, much-branching, erect plant, 3 to 4 feet high.

**Leaves** several or many, long, narrow, 1 foot or more long, 1/4 to 1 inch wide. **Flower stem** slender, equal or longer than leaves, branching. **Flowers** bright orange, in a cluster at the stem top, some 1-1/2 inches across; flower tube curved (15).

#### Propagation:

By underground stems or corms.

#### Habitat:

Found especially in high, cool regions. A weed in cultivated areas and lawns.

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#### History:

A hybrid of *Crocasmia aurea* Planch. and *T. pottsii* Bth., two species of two African genera.

#### Note:

Grown as an ornamental.

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## CANNACEAE (CANNA FAMILY)

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*Canna indica* L.

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### CANNA

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#### Description:

The wild form an herbaceous perennial, 3 to 4 feet high.

**Leaves** ovate to oblong, lanceolate, 6 to 8 inches long.

**Flowers** small, red, yellow, or speckled; sepals 1-1/2 inches long; petals lanceolate, erect with curved tips, 1 to 2 inches long, or more. **Seeds** spherical, 1/4 inch in diameter, black, enclosed in a husklike capsule (20).

#### Propagation:

- By seed and by thick, perennial, underground stems.

#### Habitat:

A weed along roadsides and in cultivated areas. Grows in large thickets, crowding out other plants.

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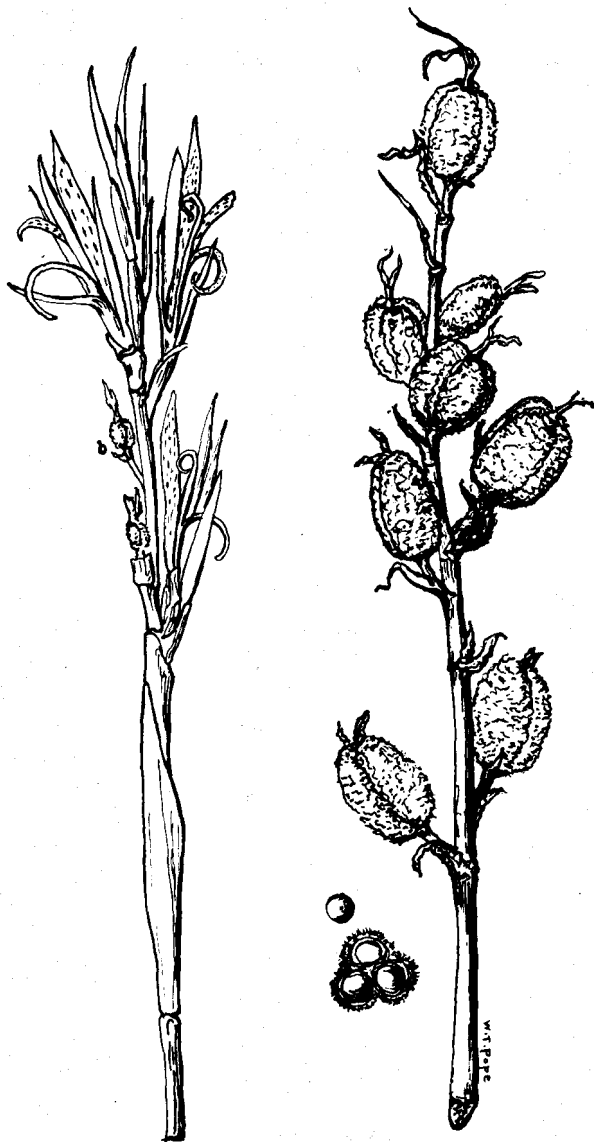
#### History:

Native to tropical America. Probably introduced to Hawaii soon after 1778.

#### Notes:

Difficult to remove, once established. Also cultivated as an ornamental.

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## MYRICACEAE (BAYBERRY FAMILY)

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*Myrica faya* Ait.

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### FIREBUSH

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#### Description:

A shrub or small tree, to about 20 feet high; branches smooth.

**Leaves** oblong-lanceolate, sharp pointed, shiny, dark green, with entire or toothed margins, smooth, 2 to 4 inches long.

**Male flowers** with 4 stamens; **female flowers** in elongated spikes, sometimes three flowers joined together and accompanied by one bract. **Fruit** red, edible, 1/4 inch across (3, 15).

#### Propagation:

By seed.

#### Habitat:

A weed in pastures, rangelands, and waste places.

---

#### History:

Native to the Azores, Madeira, and Canary Islands in the Atlantic. Introduced to Hawaii about 1900.

#### Notes:

Declared **noxious** for State land leases. Spreads rapidly, forming a dense covering and crowding desirable forage.

---





## URTICACEAE (NETTLE FAMILY)

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*Hesperocnide sandwicensis* Wedd.

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### STINGING NETTLE

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#### Description:

An erect plant, 1 to 2 feet high, much branching, covered all over with stiff, spreading, mostly barbed hairs, and with short hairs on the younger parts. **Leaves** opposite, ovate, less than 1 inch long, coarsely and obtusely serrate, quite thin, covered sparingly with short soft hairs on both faces; stipules small, oblong. **Flowers** sessile, in clusters, those of both sides merging and together not exceeding 2-1/2 inches in diameter; female flowers almost sessile, less than 1 inch when full grown, covered with rigid hairs; male flowers very few, smaller, covered with fewer rigid hairs. **Fruit** an achene, pale, smooth (9).

#### Propagation:

By seed.

#### Habitat:

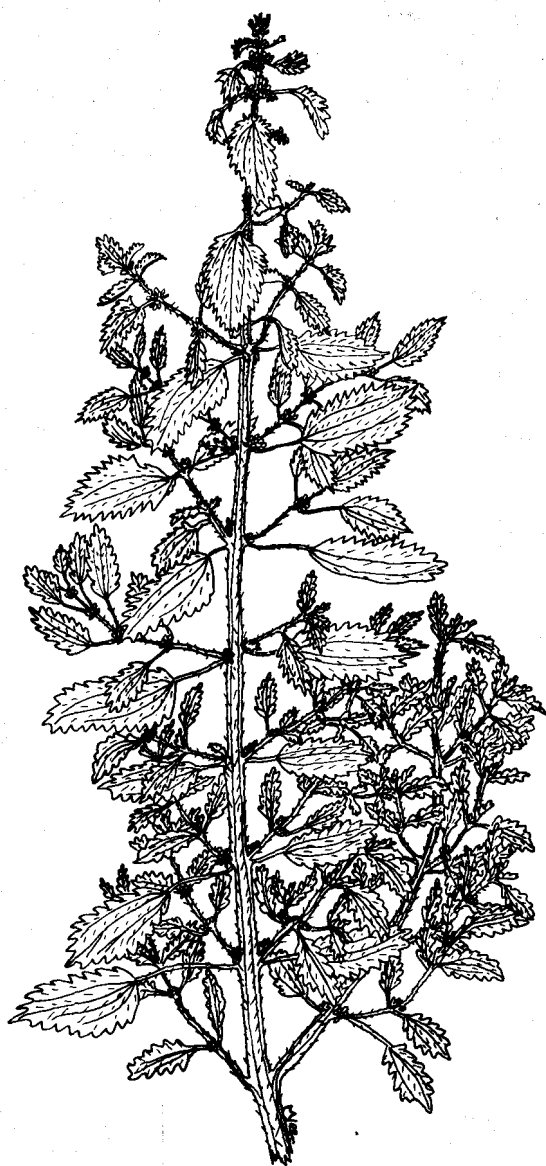
Found on high plains at 5,000 to 6,000 feet between Mauna Kea and Mauna Loa, Island of Hawaii. A weed in pastures, range-lands, and cultivated areas.

---

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A prolific seeder which crowds out more desirable forage plants. Sharp hairs cause a painful sting when handled carelessly.

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## PROTEACEAE (SILKY OAK FAMILY)

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*Grevillea Banksii* R. Br.

Synonym: *Stylurus Banksii* (R. Br. in Knight) Deg.

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### BANKS GREVILLEA, HAIKU, KAHILI FLOWER

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#### Description:

A small tree, partly deciduous, with gray to reddish hairy young branches. **Leaves** 4 to 8 inches long, compound, with three to seven sharply pointed leaflets; blades oval to lanceolate, broader toward base, grayish hair below, hairy to hairless above. **Flowers** showy, in pairs in axils of deciduous small bracts, in straight 2- to 4-inch-long racemes; calyx tube over 1/2 inch long, red; stamens short; style 1 to 2 inches long, red; stigma yellow. **Fruit** a follicle, brown, leathery, densely hairy, 1/2 to 1 inch long, tipped with a slender curved style. **Seed** flat (5).

#### Propagation:

By seed.

---

#### History:

Native to Queensland, Australia. Recorded in 1917 as a cultivated tree in Honolulu; probably first grown in Haiku, Maui.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Can spread rapidly, replacing forage plants. Poisonous flowers and fruit cause a skin reaction like that of poison ivy or mango. A white flowered form also exists.

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## POLYGONACEAE (BUCKWHEAT FAMILY)

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*Emex australis* Steinh.

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### EMEX

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#### Description:

An herbaceous annual, smooth. **Leaves** alternate; petioles 1/2 to 5 inches long, clasping the stem at the base; blade 3/4 to 3-1/2 inches long, 1/2 to 2-1/2 inches wide, oblong, obovate or ovate, margins entire or slightly irregular. **Flowers** small, unisexual, arranged in dense clusters at leaf axils. **Fruit** about 1/2 inch long, armed with three sharp spines (19).

#### Propagation:

By seed. Burs dispersed by animals, automobile tires, and water.

#### Habitat:

A weed in pastures, rangelands, and cultivated areas.

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#### History:

Native to Australia and/or South Africa. Of recent introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. Grows rapidly, crowding out forage plants. Dries up in late spring and summer, leaving infested area bare.

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## POLYGONACEAE (BUCKWHEAT FAMILY)

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*Emex spinosa* (L.) Campd.

Synonym: *Rumex spinosus* L.

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### EMEX

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#### Description:

A bushy, freely branching, prostrate or ascending plant, 1 to 1-1/2 feet long. **Stem** thick, smooth, reddish. **Leaves** 1 to 2 inches long, 1 to 1-1/2 inches wide, smooth on both surfaces, triangular to ovate, with broad base; leafstalk 2 to 6 inches long, broad and clasping the stem; stipules large, thin. **Flowers** in clusters at leaf axils. **Fruit** 3/16 to 1/4 inch long, 1/8 to 3/16 inch wide, regularly 6-ridged lengthwise, rigidly 3-spined, smooth (22).

#### Propagation:

By seed. Burs with hard, sharp spines are dispersed by animals and even automobile tires.

#### Habitat:

Found in dry regions from sea level to 5,000 feet. A weed in pastures, rangelands, and cultivated areas.

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#### History:

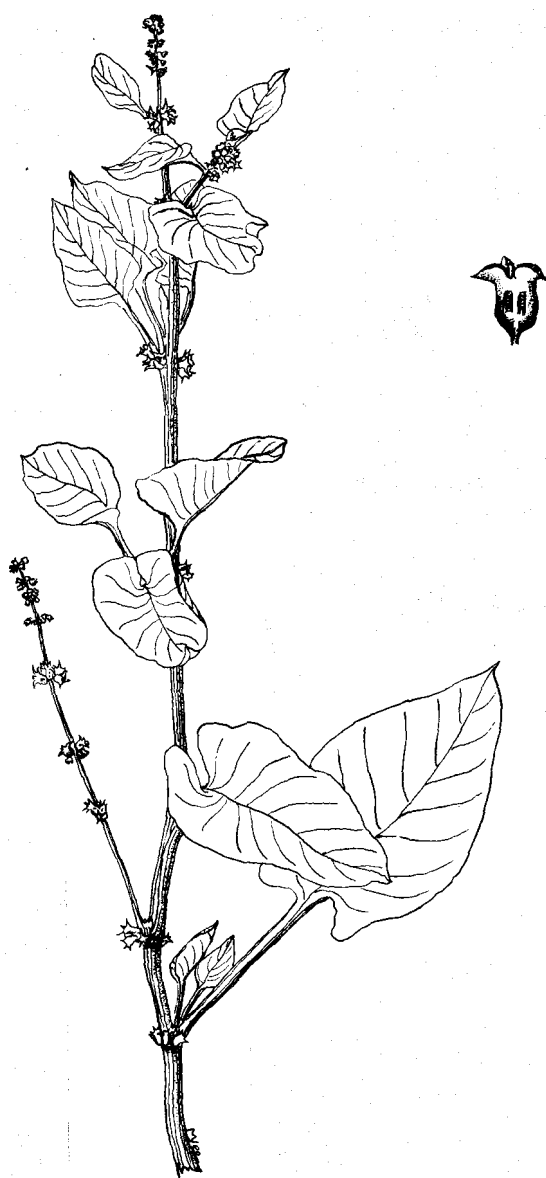
Native to the Mediterranean region. Of recent introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Grows rapidly during rains, crowding out forage plants. Dries up quickly.

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## CHENOPODIACEAE (GOOSEFOOT FAMILY)

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*Chenopodium album* L.

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### LAMBSQUARTERS

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#### Description:

A succulent, rapidly growing annual, 2 to 4 feet or more high, erect, ridged, and sometimes striped longitudinally with pink or purple. **Leaves** rhombic-ovate or goosefoot-shaped near the base of the stem, but become more narrow toward the top of the plant. **Flowers** green, small, crowded on spiked panicles in the leaf axils and at the top of the stems and branches; calyx 5-lobed, ridged, and enfolding the seeds. **Seeds** black, lens-shaped (20).

#### Propagation:

By seeds which have long viability.

#### Habitat:

Found throughout lower elevations and up to 3,000 feet. A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Native to Europe. Introduced early to Hawaii.

#### Note:

Grows rapidly, using nutrients and moisture needed by more desirable plants.

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## CHENOPODIACEAE (GOOSEFOOT FAMILY)

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*Chenopodium ambrosioides* L.

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### MEXICAN TEA

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#### Description:

A strongly aromatic perennial, about 30 inches high, green; branches numerous, erect, leafy, angular, grooved, hairless to sparingly hairy. **Leaves** wrinkled, hairless above, fine hairs below, marked with yellow transparent dots below, pointed; lower leaves ovate-lanceolate, commonly up to 4 inches long and 1 inch wide, coarsely indented; upper leaves numerous, smaller. **Flowers** in dense clusters to form short, dense, bractlike spikes; calyx green, 5-lobed, rarely 3- or 2-lobed. **Seed** round, lens-shaped, about 1/64 inch in diameter, dark brown, shiny, smooth (5).

#### Propagation:

By seed.

#### Habitat:

Found from sea level to at least 4,000 feet. A weed in pastures, rangelands, waste places, and along roadsides.

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#### History:

Native to Mexico. First noted in Hawaii in 1866. Has been cultivated as an aromatic tea.

#### Note:

Avoided by livestock because of its strong mintlike flavor.

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## CHENOPODIACEAE (GOOSEFOOT FAMILY)

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*Salsola pestifer* A. Nels.

Misdetermined as *S. Kali* L., var. *tenuifolia* Tausch.

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### RUSSIAN THISTLE

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#### Description:

An intricately branched, bushy, globular annual, 1 to 3 feet high; young plants fleshy and tender; mature plants hard and prickly. **Stems** ridged and often reddish. **Young leaves** alternate, narrow pointed, 1/2 to 2 inches long, later falling off; **mature leaves** short, stiff, awl-shaped, ending in a spine.

**Flowers** whitish, tiny, clustered at leaf base along the upper branches, with no petals; flower parts 5, dry, develop large veiny wings which meet to form a cover over the fruit. **Fruit** reddish, top-shaped, slightly winged, 1-seeded. **Seed** gray to brownish-yellow (1).

#### Propagation:

A single plant can produce 20,000 to 50,000 viable seeds. At maturity the plant may break off at the ground level and become a "tumbleweed". Seeds are scattered as it tumbles in the wind.

#### Habitat:

Thrives in dry regions, where there is little competition from other plants. Only known infestation is at Kamuela, Island of Hawaii.

---

#### History:

Native to southeastern Russia and western Siberia. Accidentally introduced to Hawaii about 1947.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Spreads rapidly, crowding out forage plants. Under certain conditions it may cause nitrate poisoning in cattle.

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## AMARANTHACEAE (AMARANTH FAMILY)

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*Achyranthes indica* (L.) Mill.

Synonym: *A. aspera* L.; *A. aspera* sensu Haw. bot., non L.

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### ACHYRANTHES

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#### Description:

An erect or almost erect annual, 20 to 80 inches high; branches many, spreading, more or less cylindrical, ash-colored. **Leaves** thin, hairy throughout or only on lower side; blades round to obovate, 1 to 3 inches long, with rounded or wedge-shaped base and abrupt tip. **Inflorescence** a spike, 2 to 10 inches long, 1/4 inch thick, with hairy flower axils; **flowers** greenish, about 3/16 inch long, densely arranged near the top of the spike and scattered frequently in pairs toward the base; bracts oval to circular with a rigid, spiny midrib; bractlets oval, bristly, and shorter than the calyx. **Seed** single, oblong, 1/16 inch long, dull, reddish (5).

#### Propagation:

By seed.

#### Habitat:

Found in arid fields and wastelands near sea level.

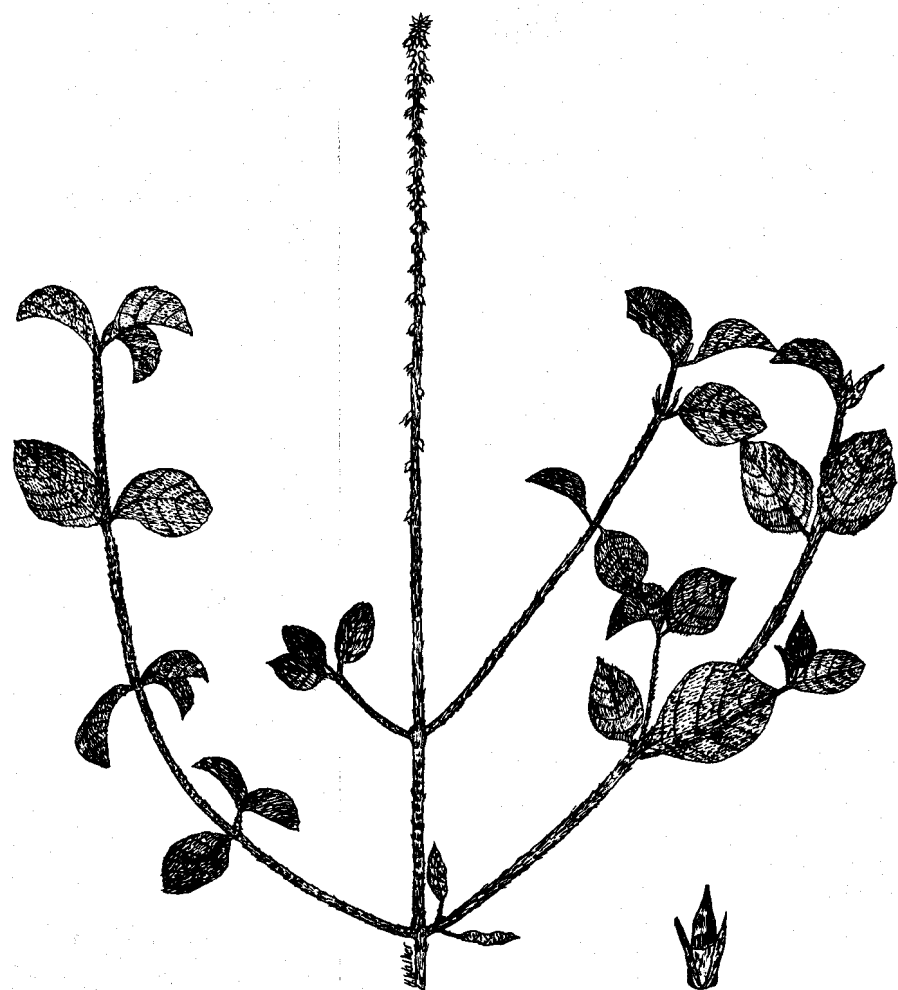
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#### History:

A weed in almost all tropical and subtropical regions. Accidentally introduced to Hawaii before 1888.

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## AMARANTHACEAE (AMARANTH FAMILY)

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*Alternanthera sessilis* (L.) R. Br. ex R. & S.

Synonym: *Gomphrena sessilis* L.

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### SESSILE JOYWEED

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#### Description:

A semi-prostrate herb. **Stems** slightly hairy. **Leaves** broadly lanceolate, minutely toothed, varying in size; small leaves 1/4 to 1 inch long, 1/8 to 1/4 inch wide; large leaves 1-1/2 to 2 inches long, 1/4 to 3/8 inch wide. **Flowers** white, small, sessile, borne in the leaf axils. **Fruit** enclosed in a small bladder which does not split open (18).

#### Propagation:

By seed.

#### Habitat:

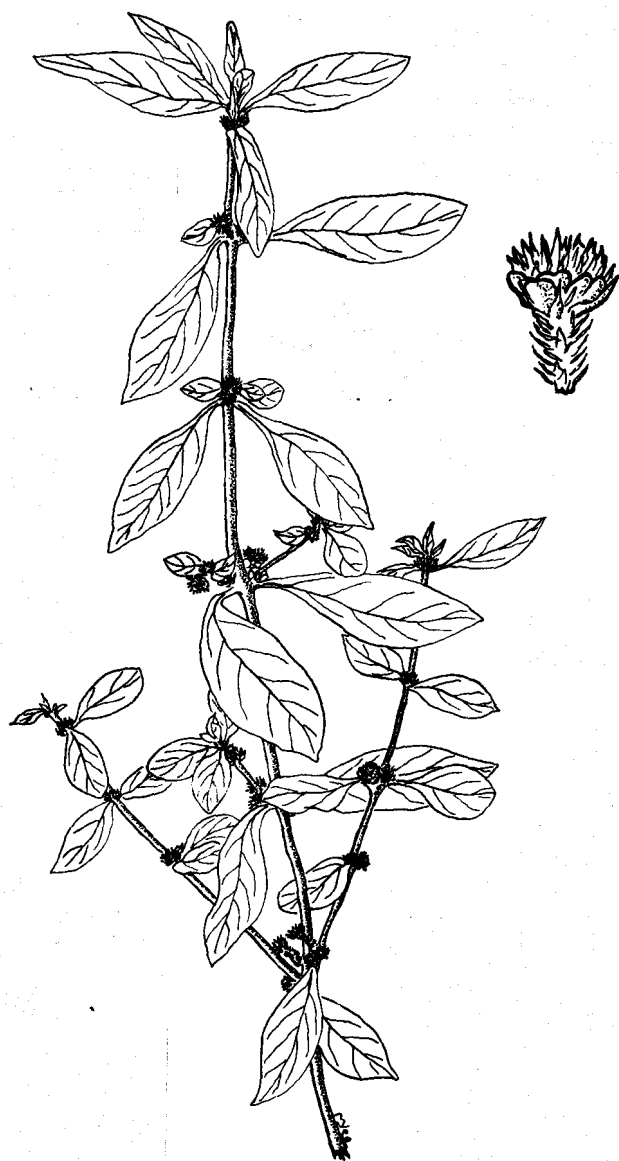
Found in damp, shady regions. A weed in cultivated areas and wastelands.

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#### History:

Common throughout tropical Africa, southern Asia, and Australia.

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## AMARANTHACEAE (AMARANTH FAMILY)

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*Amaranthus dubius* Mart.

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### SPLEEN AMARANTH

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#### Description:

An erect plant, 1 to 3 feet high, often branching. **Stem** thick, smooth except the upper young portions which are slightly hairy, usually red. **Leaves** 1-1/2 to 3-1/2 inches long, 1 to 2-1/2 inches wide, ovate, smooth on both surfaces, margin smooth, on leafstalk 1 to 3 inches long. **Flowers** in dense clusters, axillary and terminal, greenish; male and female flowers separate, each with 5 sepals, linear-oblong, with a short pointed tip, 1-veined; bracts less than twice the length of the sepals, broadly lanceolate at the base, tapering to a slender spine. **Seeds** small, oval, black (22).

#### Propagation:

By seed.

#### Habitat:

Found in dry and in wet regions. A weed in cultivated areas.

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#### History:

Native to tropical America.

#### Note:

A prolific seeder.

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## AMARANTHACEAE (AMARANTH FAMILY)

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*Amaranthus spinosus* L.

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### SPINY AMARANTH, PAKAI KUKU

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#### Description:

An annual, 1 to 4 feet high. **Stems** stout, erect, smooth, longitudinally grooved, with many lateral branches which also become seed bearing. **Leaves** alternate, 1 to 3 inches long, broadly lanceolate, pointed at the tip, with lower ends terminating in leafstalks several inches in length; leaf color varies slightly. At the base of each leaf is a pair of diverging stipular spines, almost as rigid and sharp as needles, 1/4 to 1/2 inch long. **Flowers** greenish, small, unattractive, arranged in slender spikelets -- the upper ones mostly male flowers, the lower ones fertile; bracts, sepals, and other floral parts seem massed in disorder. **Seeds** very small, lens-shaped, shiny dark brown (20).

#### Propagation:

By seed which has long viability. Dispersed by water.

#### Habitat:

Found in dry to moderately wet regions. A troublesome weed in pastures, rangelands, waste places, and cultivated areas.

---

#### History:

Native to tropical America. Accidentally introduced to Hawaii about 1900.

#### Notes:

A prolific seeder which crowds out forage grass. Avoided by livestock because of its long sharp spines. A common cause of hay fever.

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ハリビエ



## AMARANTHACEAE (AMARANTH FAMILY)

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*Amaranthus viridis* L.

Synonyms: *A. gracilis* Desf., *Euxolus viridis* (L.) Moq.

---

### SLENDER AMARANTH

---

#### Description:

An erect or prostrate plant, 1 to 2-1/2 feet high, freely branching. **Stem** stout, smooth, grooved lengthwise, reddish. **Leaves** 2 to 3 inches long, 1-1/2 to 2 inches wide, broadly lanceolate or ovate, smooth on both surfaces, green above, light below, on leafstalks 1 to 2 inches long. **Flowers** greenish to purplish, borne in terminal spikes and small dense axillary clusters, male and female flowers separate; sepals 3-lobed, 1/32 inch long, lanceolate; stamen and style branches 3, stamens opposite sepals; bracts broadly lanceolate, much shorter than sepals. **Seeds** small, disc-shaped, dark brown (22).

#### Propagation:

By seed.

#### Habitat:

Found in dry and in moderately wet regions. A weed in cultivated areas.

---

#### History:

Found in most tropical countries.

#### Note:

Spreads close to the ground.

---





## NYCTAGINACEAE (FOUR O'CLOCK FAMILY)

---

*Boerhavia diffusa* L.

---

### BOERHAVIA, ALENA

---

#### Description:

A prostrate hairless perennial, branching from the base, 1 to 2 feet long. **Leaves** small, ovate, or ovate-lanceolate.

**Flowers** pinkish, small, sessile, four to six in an umbel on slender stalk 1 to 3 inches long; stamens 2; pistil 1.

**Seed** 1 (20).

#### Propagation:

By seed.

#### Habitat:

Common in lowlands on old lava flows, rocky slopes, and beaches.

---

#### History:

Native to tropical regions of the Pacific and Indian Oceans.

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## NYCTAGINACEAE (FOUR O'CLOCK FAMILY)

---

*Mirabilis Jalapa* L.

---

### FOUR O'CLOCK, MARVEL-OF-PERU

---

#### **Description:**

An erect, branching perennial herb, 2 to 3 feet high; stems and branches smooth and greenish. **Leaves** ovate-lanceolate, with heart-shaped base and long tapering tip. **Flowers** of many attractive colors -- white, red, yellow, or striped, in clusters among the leaves; flowers peculiar in having no true corolla; the calyx modified into a tube, the outer portion of which unfolds into a trumpet-shaped flower 1 inch or more across; also with a slight odor. **Seeds** dull black, oblong, 3/8 inch long, ridged (20).

#### **Propagation:**

By seed or tuberous roots.

#### **Habitat:**

Found at lower elevations. A weed in pastures, rangelands, and cultivated areas.

---

#### **History:**

Native to Mexico. Introduced as an ornamental to Hawaii during the late 1800's.

#### **Notes:**

Seeds and roots poisonous. Flowers open from late afternoon until the following morning.

---



## PHYTOLACCACEAE (POKEWEED FAMILY)

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*Phytolacca octandra* L.

Synonym: *P. acinosa* sensu Pope, non Roxb.

---

### PHYTOLACCA, POKEWEED

---

#### Description:

A branching, upright, perennial herb, or partly shrubby plant, 3 to 5 feet high. **Stems** smooth, green or streaked with purple. **Leaves** light green, 2 to 4 inches long, thin, oblong to oval with rounded ends, pointed at the tip, base tapering into short leafstalk, with entire margin; venation prominent below, depressed above, purplish. **Flowers** arranged in terminal spikelike racemes, which by further plant growth become lateral and opposite a leaf; each flower on short stalk; sepals 5, white with greenish stripe above, greenish below, (in reality a modification of calyx and corona with function of both), persistent, becoming purple with maturity of fruit. **Fruit** a compact spikelike cluster; berries dark purple, oblate, smooth, normally 8 compartments, each containing 1 seed. **Seed** black, lens-shaped, with purple, juicy, inedible pulp (20).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and waste places.

---

#### History:

Native to tropical America. First collected in Hawaii in 1912.

#### Note:

Root and seed poisonous.

---



## PORTULACACEAE (PURSLANE FAMILY)

---

*Portulaca oleracea* L.

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### PURSLANE, PIGWEED

---

#### Description:

A low, prostrate, succulent annual, freely branching from a deep, central root. **Stems** fleshy, round, irregularly branching, smooth, and a dull greenish or reddish color. **Leaves** obovate or spoon-shaped, arranged alternately or in clusters at branch ends. **Flowers** yellow, small, solitary, sessile, complete in floral parts; petals 5, opening in bright sunlight for a few hours in the morning; stamens about 7 to 12, sensitive to the touch. **Fruit** a single urn-shaped, 1-celled capsule. **Seeds** many, small, dark; on maturity seeds are released by the upper half of the capsule falling off like a lid (20).

#### Propagation:

By seed. Each plant produces hundreds of viable seeds.

#### Habitat:

Found almost everywhere except in cold regions. A common weed in cultivated areas and lawns.

---

#### History:

Probably native to the southwestern U.S. Mainland.

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## BASELLACEAE (BASELLA FAMILY)

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*Boussingaultia gracilis* Miers

Synonym: *B. cordifolia* Ten., formerly misdetermined as *B. basseloides* HBK.

---

### MADEIRA VINE

---

#### Description:

A perennial vine. **Stems** smooth, reaching to 20 feet in one season. **Leaves** alternate, broad-ovate, wavy, margins entire, 1 to 3 inches long. **Inflorescence** slender flower spikes, to 1 foot long, bearing small, short-stalked, fragrant flowers, opening white and finally turning black (15).

#### Propagation:

By aerial tubercles and underground tubers.

#### Habitat:

Found growing on arbors and walls. A weed in waste places and cultivated areas.

---

#### History:

Native to Ecuador. Introduced to Hawaii as an ornamental.

#### Notes:

Declared **noxious** in Regulation NW 10. Difficult to control because of underground tubers.

---



## CARYOPHYLLACEAE (PINK FAMILY)

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*Drymaria cordata* (L.) Willd. ex R. & S.

Synonym: *Holosteum cordatum* L.

---

### DRYMARIA

---

#### Description:

A prostrate plant, loosely and freely branching from the base.

**Stem** with swollen nodes, smooth. **Leaves** opposite, on short petioles, heart-shaped, green above, light below, smooth on both sides, 1/4 to 3/4 inch long. **Flowers** white, small, 1/8 to 3/16 inch long, axillary or terminal, borne in a long, slender, branching cluster; petals 5, enclosed in calyx-lobes, separate, linear, 2-parted from the middle; sepals 5, oval with rounded ends, separate, green with a colorless edge, smooth, 3-veined; stalk below the flower covered with white glands. **Fruit** a pod, oval, with 5 to 7 seeds. **Seeds** 1/25 inch long, oval, flat, blackish, covered with knobs (22).

#### Propagation:

By seed and by stems which root at the nodes.

#### Habitat:

Found in wet regions. A weed in lawns and cultivated areas.

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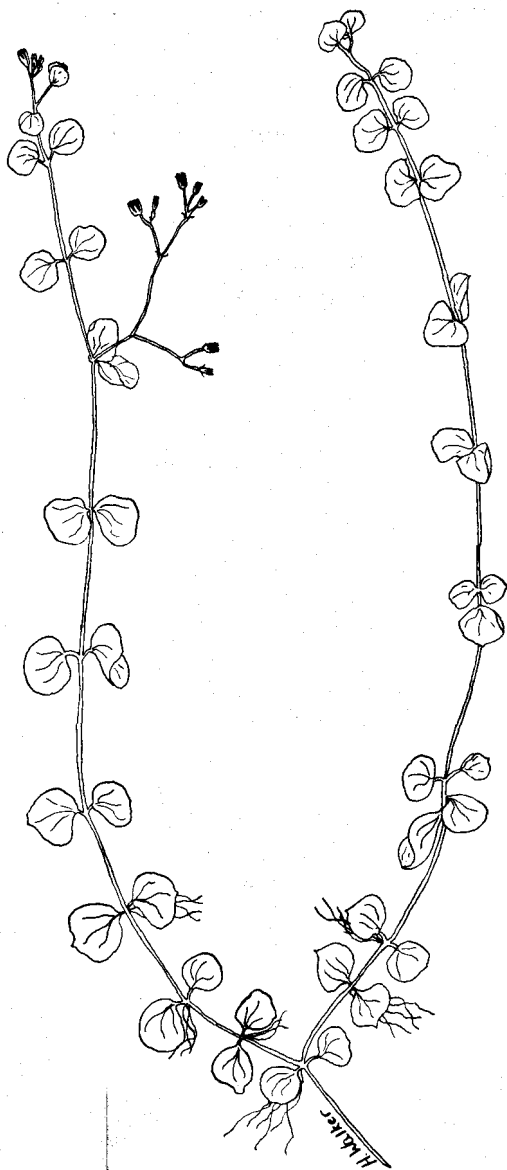
#### History:

Native probably to tropical America.

#### Note:

A colony can be started from a single plant-section.

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## CARYOPHYLLACEAE (PINK FAMILY)

---

*Silene gallica* L.

Synonym: *S. anglica* L.

---

### SMALL-FLOWERED CATCHFLY

---

#### Description:

An annual, 1 to 2 feet high. **Stems** slender, simple or branching. **Leaves** spoon-shaped or oblanceolate, 1/2 to 2 inches long, blades narrowed into a leafstalk. **Flowers** white or pale pink, in terminal, simple one-sided racemes, each flower sessile or lower flowers on stalks; calyx cylindrical; corolla 10-veined, 1/2 inch long, with toothed margins; petals 5, usually twisted about 1/4 like the blades of a propeller, margin entire or cut half-way down. **Fruit** a capsule, enlarged in the middle, 3-chambered, open at the top. **Seeds** small, tuberculate, flattish on one side (20).

#### Propagation:

By seed.

#### Habitat:

Occasionally found along mountain trails. A weed in pastures and cultivated areas.

---

#### History:

Native to the Old World. Probably of accidental introduction to Hawaii.

---



## CARYOPHYLLACEAE (PINK FAMILY)

---

*Spergula arvensis* L.

---

### CORN SPURRY

---

#### Description:

An annual, 6 to 18 inches high, branched at or near the base.

**Leaves** linear, clustered at the nodes in two opposite sets of six to eight together, grooved on the under side. **Flowers** white, numerous, small, about 1/4 inch across, borne in terminal panicles; sepals 1-1/2 inches long, covered with soft, short minute hairs; petals as long as sepals; stamens 10, shorter than sepals. **Seeds** nearly spherical to lens-shaped, rough, with a narrow, sharp margin (3, 9).

#### Propagation:

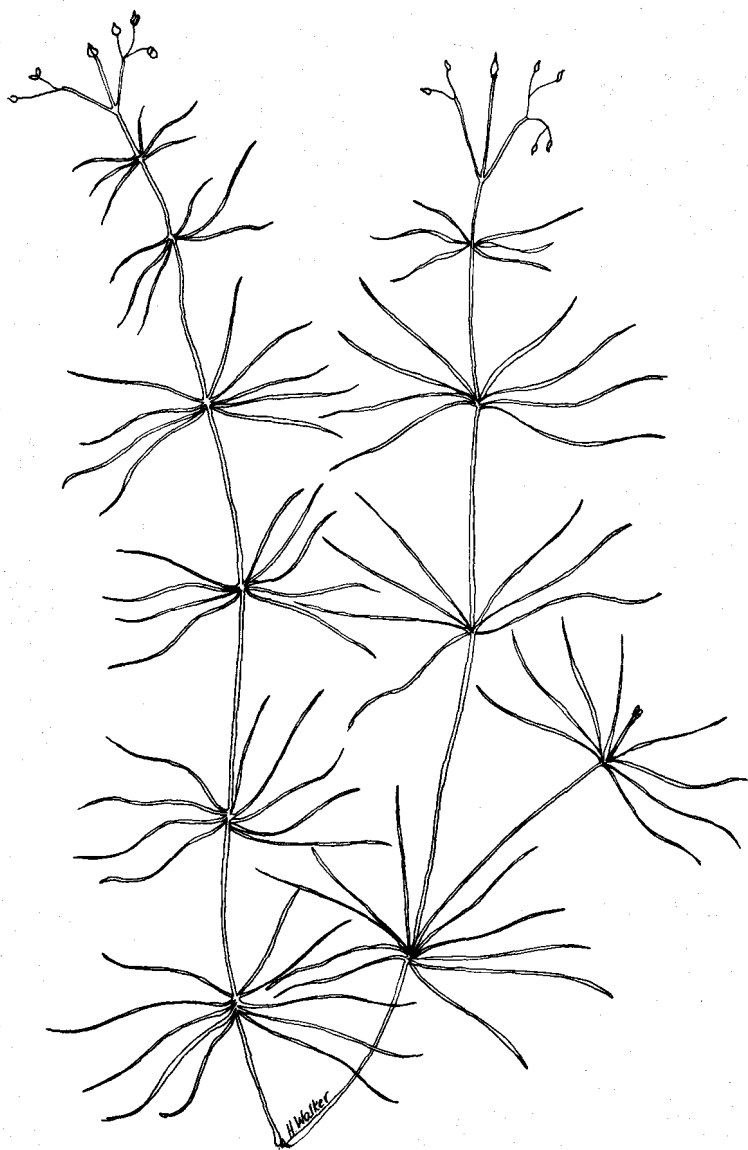
By seed.

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#### History:

Native to Europe. Of very recent introduction to Hawaii. At present found on the Island of Hawaii.





## PAPAVERACEAE (POPPY FAMILY)

---

*Argemone glauca* Pope

Synonyms: *A. alba* Lestib.; *A. mexicana* sensu Hbd., non L.

---

### PRICKLY POPPY, PUAkala

---

#### Description:

An annual. **Stems** upright, 2 to 3 feet high, branching in upper portion, covered with a bluish or whitish coating, prickly throughout, juice a bright yellow. **Leaves** coarse, 5 to 7 inches long, deeply lobed, whitish, margins wavy, irregularly toothed and prickly; venation prominent, whitish, prickly; basal portion of blade narrowing along midrib, at point of attachment clasping half the circumference of the stem. **Flowers** white, terminal, on branches from upper axils; sepals usually 3, prickly and prominently pointed at the tip; corolla 3 inches across; petals 6, delicate, roundish; stamens numerous, orange colored, clustered around the pistil; stigma in 3, 4, or 5 parts, bluish tipped with dark brown. **Fruit** a capsule, consisting of 3 to 5 compartments, at maturity 1 inch or more in length, oval to oblong, prickly, and splitting at the top for seed dispersal. **Seeds** about 3/16 inch in diameter, many (20).

#### Propagation:

By seed.

#### Habitat:

Abundant on dry, rocky slopes from sea level to 1,000 feet. A weed in pastures and rangelands.

---

#### History:

Endemic to Hawaii. First collected in 1779 by botanist on Captain Cook's expedition.

#### Note:

*A. mexicana* L. has yellow flowers and ovoid-shaped fruit.

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## CAPPARIDACEAE (CAPER FAMILY)

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*Gynandropsis gynandra* (L.) Briq.

Synonyms: *G. pentaphylla* (L.) DC., *Cleome pentaphylla* L., *C. gynandra* L.

---

### WILD SPIDER FLOWER

---

#### Description:

A sticky, hairy annual, up to 2 or 3 feet high, with an offensive odor. **Leaves** of two distinct kinds: regular leaves palmate, with five obovate leaflets -- the terminal or larger leaflet 1-1/2 to 2-1/2 inches long, with slightly hairy margins; small bract leaves of the floral stalks trifoliate, with obtuse, nearly sessile leaflets. **Flowers** yellow and pale purple, on stalks about 1 inch long; sepals 4, falling off at the end of the growing season; petals 4, clawlike and open in the bud; stamens 6, unequal; stigma almost sessile. **Fruit** a capsule, 2-valved, 3 or 4 inches long, often containing as many as 130 seeds. **Seeds** disc-shaped, with roughened surfaces (20).

#### Propagation:

By seeds which are viable for a long period of time.

#### Habitat:

Common in hot, dry regions at lower elevations. A weed along roadsides, in wastelands, and in cultivated areas.

---

#### History:

Native to Africa. First observed in Hawaii in 1857.

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## CRUCIFERAE (MUSTARD FAMILY)

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*Brassica nigra* (L.) Koch

Synonym: *Sinapis nigra* L.

---

### BLACK MUSTARD

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#### Description:

An erect annual, 1 to 2 feet high, rough with stiff hairs below; branches wide-spreading. **Leaves** peltate, pinnately divided, somewhat hairy, margins of lower ones lobed, upper ones entire. **Inflorescence** a flat-top flower cluster at first; sepals spreading; petals yellow. **Fruit** a pod, short, smooth, erect, 4-cornered, beaked. **Seeds** black, small (3, 9).

#### Propagation:

By seed.

#### Habitat:

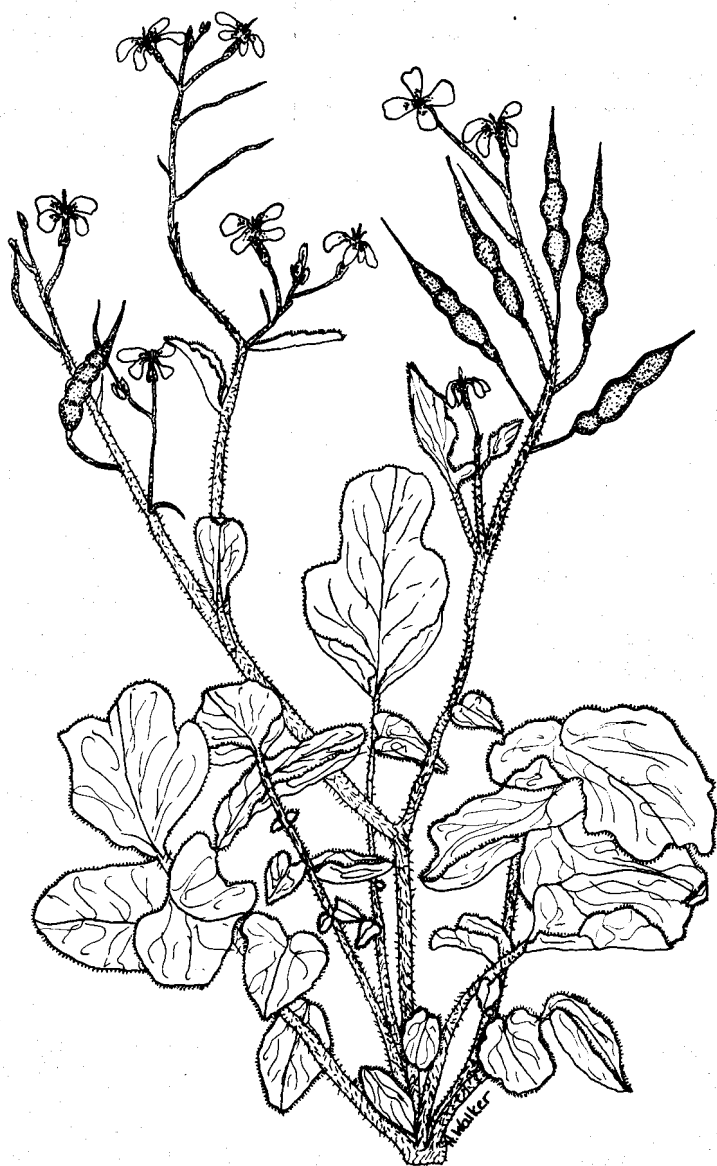
A weed in cultivated areas.

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#### History:

Native to the Old World.

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## CRUCIFERAE (MUSTARD FAMILY)

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*Coronopus didymus* (L.) Smith

Synonyms: *Senebiera didyma* (L.) Pers., *Lepidium didymum* L.

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### SWINECRESS, SWINE WATERCRESS

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#### Description:

A prostrate weed, branching from the base, and in its early growth forming a flat rosette upon the ground.

**Mature stems** 4 inches to 1 foot long. **Leaves** small, deeply cut into segments forming a finely divided foliage; leaves near the base of the stems usually have slender leafstalks, while those near the stem tips are sessile.

**Flowers** white, extremely small, arranged in small axillary clusters, each flower attached on a short threadlike stalk.

**Fruit** a capsule, flat, delicately wrinkled on the outer surface, each containing two small seeds (20).

#### Propagation:

By seed.

#### Habitat:

Found in wastelands, along roadsides, and in yards.

A weed in cultivated areas.

---

#### History:

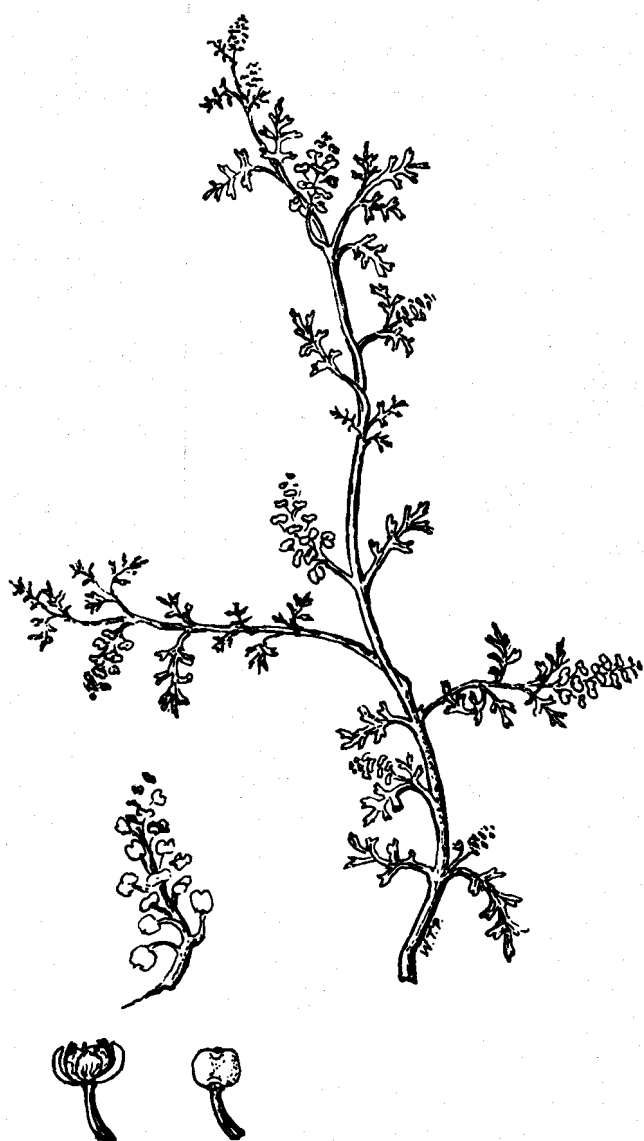
Native to Eurasia. Accidentally introduced to Hawaii.

#### Notes:

The entire plant has a disagreeable odor and a flavor which can be imparted to dairy products. Livestock usually avoid it.

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## PITTOSPORACEAE (PITTOSPORUM FAMILY)

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*Pittosporum undulatum* Vent.

Synonym: *P. philliraeoides* of Haw. bot., non DC.

---

### PITTOSPORUM

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#### Description:

A slender-branched shrub or tree, rarely becoming 16 feet or more high (although it may be 40 feet in its native country), with smooth gray bark. **Leaves** alternate, often crowded at ends of slender, light brown branches, 3-1/2 to 5 inches long, lanceolate, pointed at both ends, shiny, with prominently wavy margins. **Flowers** almost white, few, fragrant, borne on the youngest branches in terminal clusters about 1 inch long; petals 5, abruptly bent downward at end. **Fruit** globe-shaped, compressed, usually 5/8 inch long, leathery, about 25-seeded. **Seeds** angular, 1/8 inch long and 1/32 inch thick, dark brown, smooth (5).

#### Propagation:

By seed. Flowers during March and April; capsule matures 4 to 5 months later.

#### Habitat:

Found in moist to wet regions, along roadsides and in open forests between Honokaa and Kamuela, Island of Hawaii. A weed in pastures and rangelands.

---

#### History:

Native to Australia. Introduced as an ornamental to Hawaii from California about 1875.

#### Notes:

Declared **noxious** in Regulation NW 10. Grows and spreads fast, crowding out desirable forage. Of no forage value.

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## ROSACEAE (ROSE FAMILY)

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*Rubus penetrans* Bailey

Synonyms: *R. Koehnei* Lévl., *R. mauicola* Focke

---

### BLACKBERRY

---

#### Description:

A prickly plant, 3 to 9 feet high. **Stems** arching and trailing, more or less reddish and prickly. **Leaves** somewhat hairy and prickly, about 6 inches long, with 3 to 5 leaflets. **Flowers** white. **Fruit** purple-black, juicy, seedy, about 3/4 inch long (15).

#### Propagation:

By seed and underground stems.

#### Habitat:

Found at 3,000 to 4,000 feet or higher. A troublesome weed along roadsides, in pastures, rangelands, and waste places.

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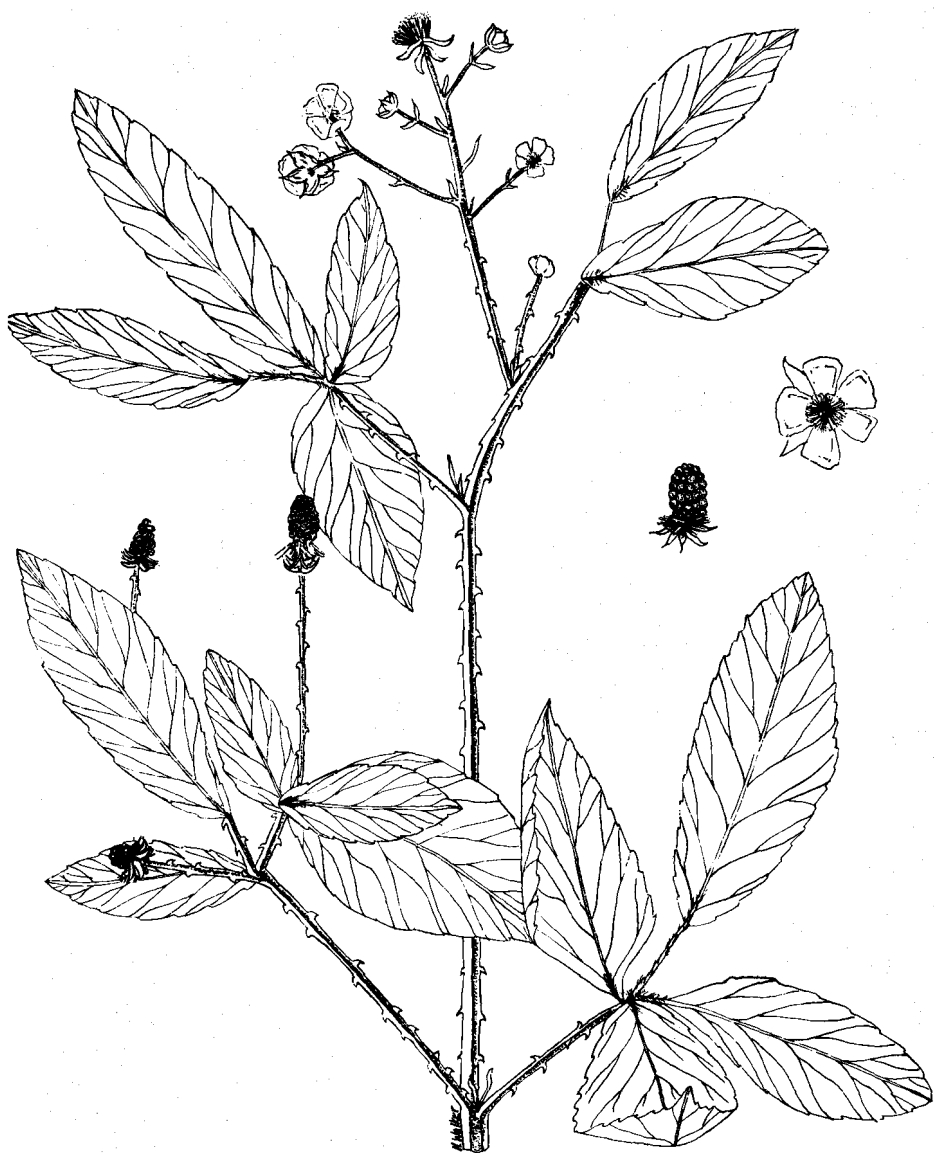
#### History:

Introduced to Hawaii in 1894.

#### Notes:

Declared **noxious** in Regulation NW 10 and for State land leases. Forms thick, impenetrable brambles, crowding out endemic vegetation and forage plants.

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## LEGUMINOSAE (BEAN FAMILY)

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*Acacia decurrens* (Wendl.) Willd.

Synonyms: *A. mollissima* Willd., *Mimosa decurrens* Wendl.

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### BLACK WATTLE

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#### Description:

A handsome tree, more or less smooth; branches moderately or prominently angled, sometimes almost winged. **Leaves** twice divided, having 8 to 15 or more pairs of compound leaflets; leaflets very numerous, 30 to 40 or more pairs, linear, 1/8 to 3/8 inch long. **Flower heads** small, globular, in axillary racemes, the upper one forming a terminal panicle; flowers 20 to 30 in a head; calyx short, fringed with hairs; petals with more or less prominent midribs.

**Pods** usually 3 to 4 inches long, 1/4 inch wide, more or less contracted between the seeds. **Seeds** ovate (21).

#### Propagation:

By seed and by suckers which arise from the roots.

#### Habitat:

Prefers fertile soil; grows well and rapidly in barren regions. A weed in pastures and rangelands at higher elevations.

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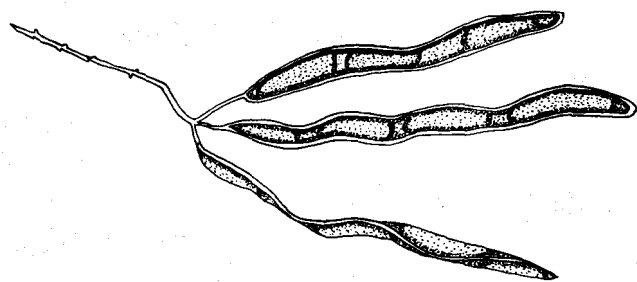
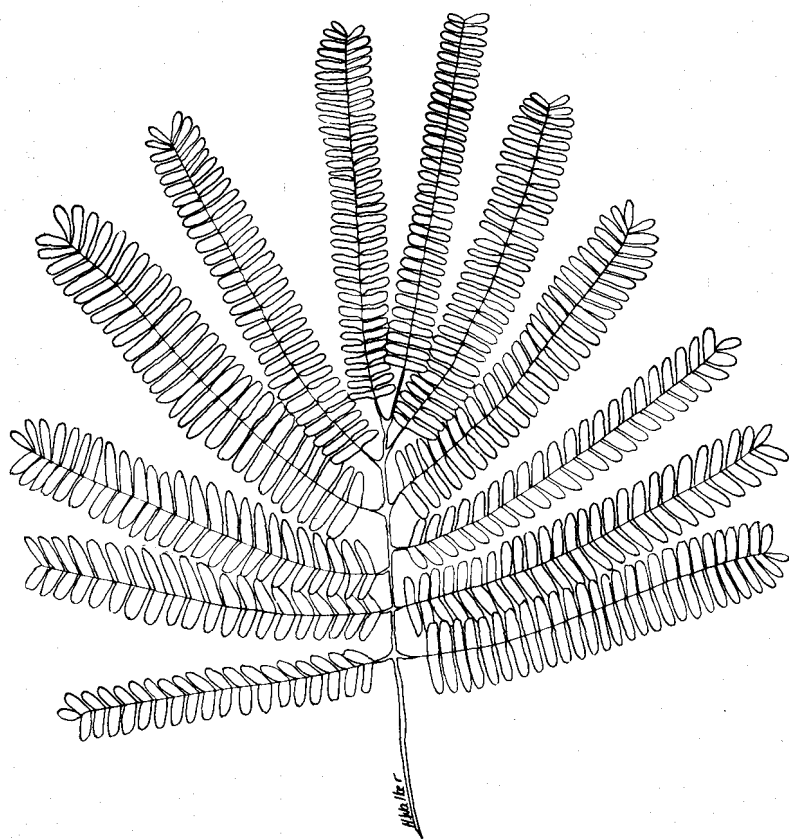
#### History:

Native to Australia. Introduced to Hawaii about 1890.

#### Notes:

Declared **noxious** for State land leases. Grows very fast, forms dense stands, and crowds out other plants.

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## LEGUMINOSAE (BEAN FAMILY)

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*Acacia farnesiana* (L.) Willd.

Synonyms: *Mimosa farnesiana* L., *Vachellia farnesiana* (L.) Wight & Arn.

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### KLU

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#### Description:

An erect, thorny, much-branching shrub; some treelike, 12 feet or more high. **Leaves** finely divided, having 4 to 6, rarely 8, pairs of compound leaflets; leaflets small, 10 to 20 pairs. **Stipules** converted into slender straight thorns, variable in length. **Flowers** yellow, sweet-scented; flower stalks short, two or three in older axils, each bearing globular heads. **Pods** thick, cylindrical, more or less curved or hooked and having straight sutures, indehiscent, filled with pithy substance in which lie the seeds (20).

#### Propagation:

By seed.

#### Habitat:

Found from a little above sea level to about 2,000 feet. A weed in pastures and cultivated areas.

---

#### History:

Native to tropical America. Probably introduced to Hawaii in early 1800's.

#### Notes:

Rarely eaten by cattle. A serious pest because of its thorns.

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## LEGUMINOSAE (BEAN FAMILY)

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*Alysicarpus vaginalis* (L.) DC.

Synonym: *Hedysarum vaginale* L.

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### ALYSICARPUS, ONE-LEAVED CLOVER

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#### Description:

A low spreading herb. **Stems** numerous, jointed, with stiff hairs; under favorable conditions stems may become 1 or 2 feet high. **Leaves** hairless, 1/2 to 2 inches long, oval to oval-oblong, stipules prominent. **Flowers** reddish-yellow to purplish, on short stalks, in terminal racemes, varying in number from 6 to 12 to the cluster, but one flower to the cluster opening at a time; calyx small, 1/8 inch long; corolla pea-shaped. **Pods** about 3/4 inch long, cylindrical, jointed between each seed, breaking at these points on maturity but not dehiscent. **Seeds** usually 5 to 7, oblong-oval, dark brown (20).

#### Propagation:

By seed.

#### Habitat:

Found in arid regions. A weed in lawns.

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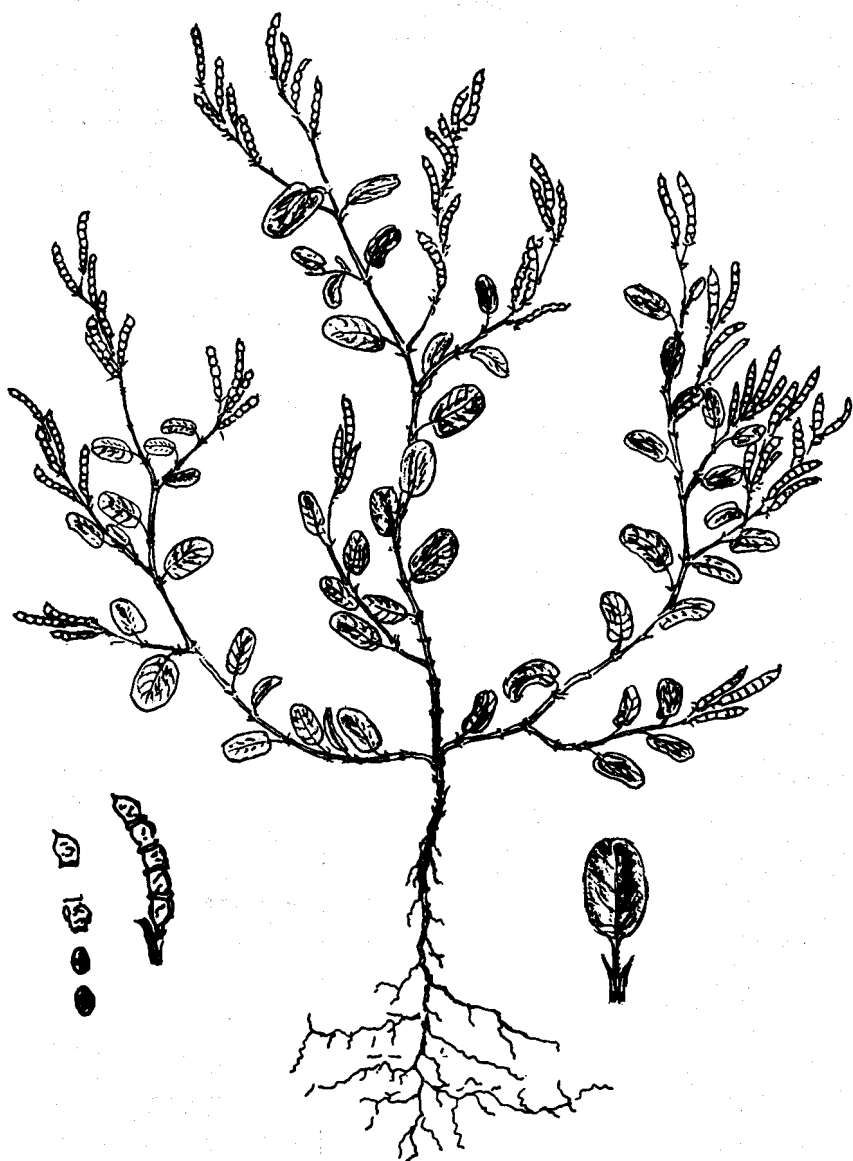
#### History:

Native to the Old World tropics. First collected in Hawaii in 1917.

#### Note:

Regarded as fair forage.

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## LEGUMINOSAE (BEAN FAMILY)

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*Caesalpinia Bonduc* (L.) Roxb.

Synonyms: *C. Jayabo Maza*, *Guilandina Bonduc* L.

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### YELLOW NICKERS, KAKALAI OA

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#### Description:

A large straggling shrub; branches pale, ridged, sparingly surrounded with yellow prickles up to 1/4 inch long; young branches and leaves covered with matted yellowish hair.

**Mature leaves** hairless or nearly so, often 20 inches long; compound leaf axils on under surface armed with scattered, spreading, sharply curved, yellowish prickles; compound leaflets 6 to 12, paired; **leaflets** 8 to 12, more or less paired, on short petioles, 2 inches long and 1 inch wide, broadly oval with rounded ends, rounded and notched at the tip.

**Flower racemes** above the axils, yellowish and hairy when young, but often purplish and hairless, commonly 6 inches long, erect, sometimes branched, with few nodding flowers; corolla yellow with red inner surface and yellow border, reddish-veined. **Pods** few to many, leathery with soft straight prickles, rounded in outline, commonly 2 to 2-1/2 inches long not counting the tip, usually 2-seeded. **Seeds** grayish-yellow, less than 1 inch long (5).

#### Propagation:

By seed.

#### Habitat:

Found in arid regions and at higher elevations.

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#### History:

Of tropical Asian origin. Also widely distributed in Central America.

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## LEGUMINOSAE (BEAN FAMILY)

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*Caesalpinia sepiaria* Roxb.

Synonyms: *C. decapetala* (Roth) Alston, *Biancaea sepiaria* (Roxb.) Todaro

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### CATS CLAW

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#### Description:

A spreading, very prickly shrub, forming dense hedges. **Leaves** divided with 6 to 10 compound leaflets; leaflets 6 to 12 pairs, oblong-obtuse; stipules partly arrowhead-shaped, falling off at end of growing season. **Flowers** bright yellow, on long stalks; stamens 10, slightly longer than petals, with filaments densely woolly in the lower half. **Pod** smooth, flat, oblong, 2 to 3 inches long, to 1 inch wide, tipped with a long point. **Seeds** 4 to 8, dark, speckled (15, 21).

#### Propagation:

By seed.

#### Habitat:

Found in gulches, along stream beds, and in moist regions. A weed in pastures, rangelands, and waste places.

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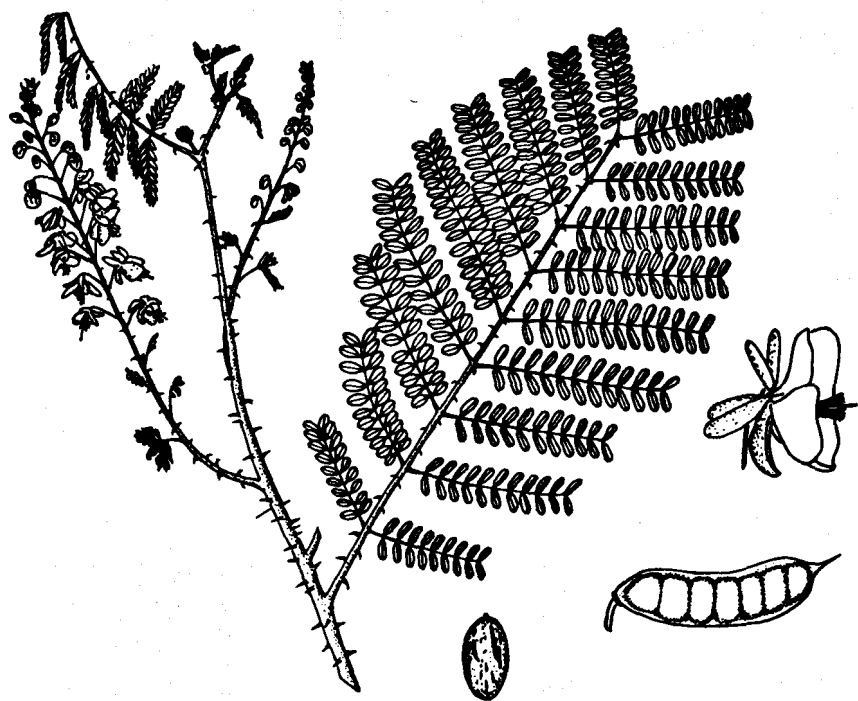
#### History:

Native to India.

#### Notes:

Declared **noxious** for State land leases. Has escaped cultivation and forms dense, impenetrable brambles.

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## LEGUMINOSAE (BEAN FAMILY)

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*Canavalia cathartica* Thou.

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### MAUNA LOA

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#### Description:

A fast-growing annual vine. **Leaflets** broad-ovate, pointed, 3 to 6 inches long, rather thin. **Flowers** pink to lavender, 1-1/2 inches long, in narrow clusters at leaf bases, a few flowers opening at a time. **Pods** short and broad, about 4 by 1-3/4 inches, with 3 ridges on one edge running from sharp tip to base. **Seeds** brown to black, about 6, somewhat flattened, ovoid (15).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and waste places.

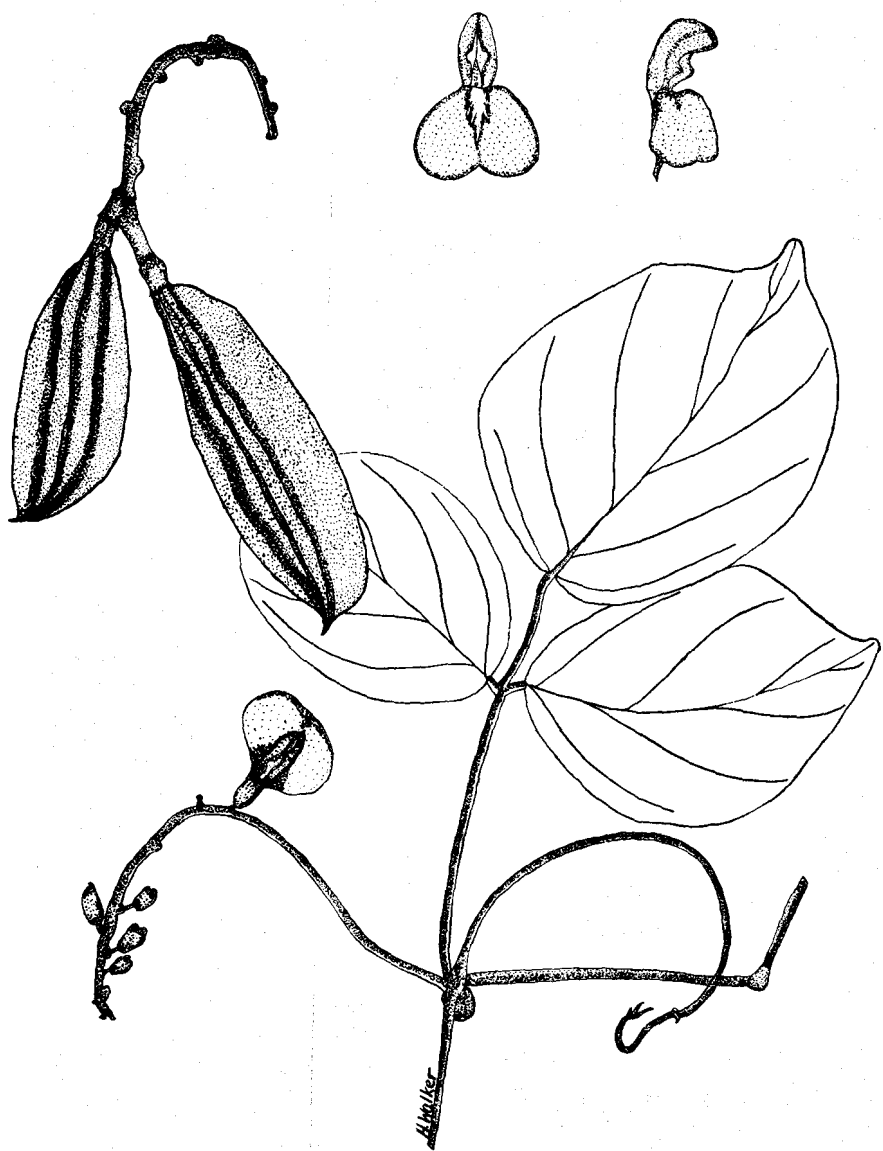
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#### History:

Native to Madagascar.

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## LEGUMINOSAE (BEAN FAMILY)

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*Cassia Leschenaultiana* DC.

Synonym: *Chamaecrista leschenaultiana* (DC.) Deg., misdetermined as *C. mimosoides* L.

---

### JAPANESE TEA

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#### Description:

An annual herb, 1 to 3 feet high, partly erect, more or less branching. **Leaves** not sensitive; leaflets 15 to 30 pairs with one gland on each midrib below the lower pair of leaflets. **Flowers** usually bright yellow, small, several attached together in leaf axils on very short stalks. **Pods** dehiscent, 1-1/4 to 1-1/2 inches long. **Seeds** 12, flattened, almost square in shape (20).

#### Propagation:

By seed.

#### Habitat:

Found below 3,000 feet. A weed in cultivated areas, pastures, rangelands, and waste places.

---

#### History:

Native to India and East Indies. Introduced to Hawaii since 1870.

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クボチヤ

## LEGUMINOSAE (BEAN FAMILY)

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*Cassia occidentalis* L.

Synonym: *Ditremexia occidentalis* (L.) Britt. & Rose

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### COFFEE SENNA, MIKI PALAOA

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#### Description:

An annual undershrub, 1 to 2-1/2 feet high, loosely spreading.

**Leaves** compound, even pinnate; leaflets smooth, 1 to 3 inches long, on a short leafstalk. **Flowers** yellow, in a raceme, few open at a time; sepals 5; petals 5, 1-1/4 to 1-3/4 inches in diameter. **Pods** rather flat, 4 to 6 inches long, smooth or sparsely hairy. **Seeds** flattish, ovate, brown, 15 to 30 per pod (12, 20).

#### Propagation:

By seed.

#### Habitat:

Prefers moist regions at lower elevations. A weed in pastures and rangelands.

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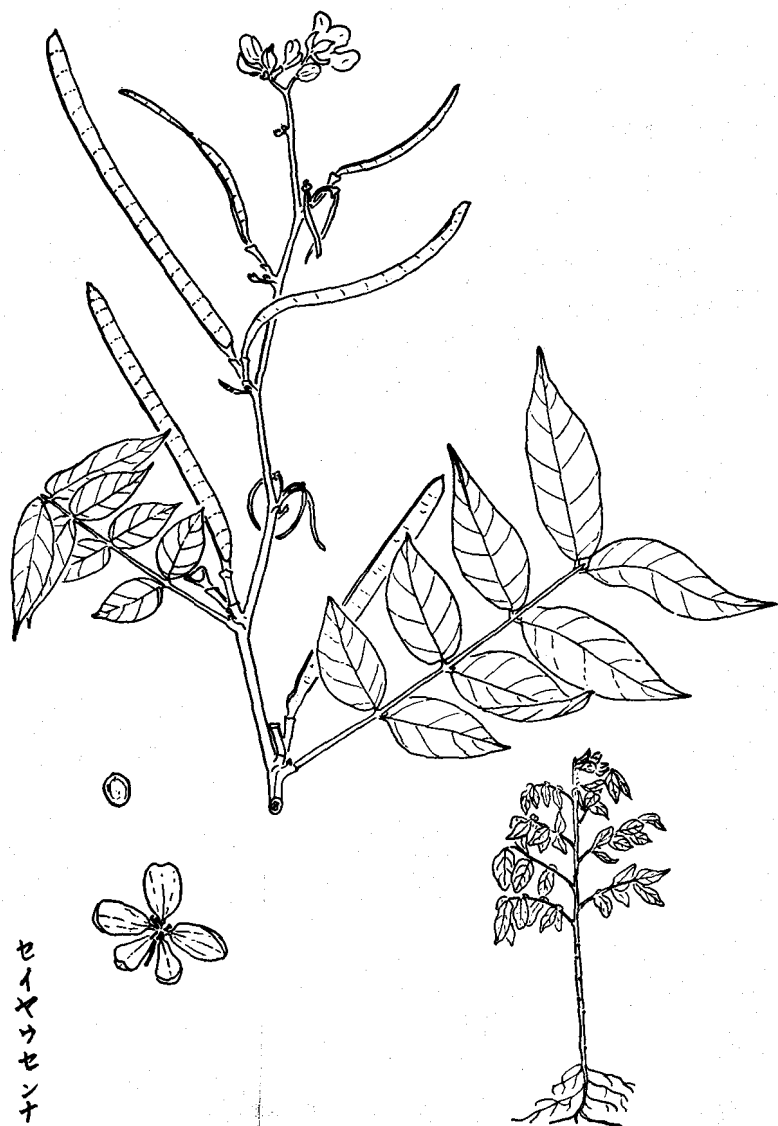
#### History:

Native to tropical America. Of early introduction to Hawaii.

#### Note:

May be poisonous to livestock.

---



セイヤウセンナ

## LEGUMINOSAE (BEAN FAMILY)

---

*Crotalaria Berteriana* DC.

Synonym: *C. fulva* Roxb.

---

### TAWNY CROTALARIA

---

#### Description:

An erect shrub, 3 to 4 feet high; branches many, densely clothed with short stiff brown hairs. **Leaves** almost sessile, oblong, tip blunt, shiny on both surfaces with minute silky hairs, stipules none. **Flowers** yellow, in branching clusters; calyx 5-parted, silky outside; standard pointed and densely silky on the back; keel glossy, stamens included in the keel; ovary silky with white hairs. **Pods** short, silky, with 2 seeds (20).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas.

---

#### History:

Native to India and East Indies. First collected in Hawaii in 1895.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Crotalaria incana* L.

---

### FUZZY RATTLE POD

---

#### Description:

A half-shrubby plant, 2 or 3 feet high. **Stems** erect and often branching, mostly covered with prominent soft gray hairs on most parts above the ground. **Leaflets** 3, ovate to oval with rounded ends, both surfaces of the blades silky with hairs.

**Flowers** yellow, 12 to 20 in terminal and sometimes lateral racemes. **Pods** silky, slightly curved, inflated, 1 to 1-1/2 inches long, dark brown or blackish at maturity. **Seeds** 20 to 30, green at maturity (20).

#### Propagation:

By seed.

#### Habitat:

Found in moderately moist regions at lower to middle elevations. A common weed in waste places, pastures, and cultivated areas.

---

#### History:

Native to tropical America. A naturalized weed in Hawaii; first collected in 1895.

---





## LEGUMINOSAE (BEAN FAMILY)

---

*Crotolaria longirostrata* H. & A.

---

### LONG-BEAKED RATTLE POD

---

#### Description:

An upright plant, 2 to 3 feet high. **Stems** somewhat woody at base, many-branched, covered with short hairs. **Leaflets** 3, oval with rounded ends or oblanceolate, the central leaflet 1/2 to 1 inch long, 1/8 to 3/8 inch wide, the lateral ones slightly smaller. **Flowers** yellow, about 1/2 inch long, many in a raceme; calyx 5-lobed, pointed, hairy. **Pods** oblong, about 3/4 inch long, hairy. **Seeds** oval, about 1/8 inch long, brownish, shiny (12).

#### Propagation:

By seed.

#### Habitat:

Found only in the Ulupalakua area on Maui. A weed in pastures and cultivated areas.

---

#### History:

Native to Mexico. Of early introduction to Hawaii; first recorded in 1850.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A profuse seeder which forms thick stands, shading out forage grasses.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Crotalaria mucronata* Desv.

Synonym: *C. Saltiana* sensu Haw. bot., non Andrz.

---

### SMOOTH RATTLE POD

---

#### Description:

An erect, slightly shrubby plant, 2 to 4 feet high, often branching. **Leaflets** 3, ovate oblong, thin, green and smooth above, pale and obscurely silky beneath. **Flowers** yellow streaked with red, small, pea-shaped, 20 to 50 in each terminal and lateral raceme. **Pods** 1-1/4 to 2 inches long, yellow at maturity, twisting and dehiscent when dry. **Seeds** 20 to 30, grayish (20).

#### Propagation:

By seed.

#### Habitat:

A common weed in pastures and cultivated areas.

---

#### History:

Native to India. Of early introduction to Hawaii.

#### Notes:

Grows in thick stands. A poor forage plant.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Crotalaria spectabilis* Roth

Synonym, *C. sericea* Retz.

---

### RATTLE POD

---

#### Description:

An erect, robust undershrub, 3 to 4 feet high. **Stems** smooth.

**Leaves** 2 to 5 inches long, oblanceolate, or sometimes spoon-shaped, base tapering into a short leafstalk; blade smooth above, with silky soft hairs below; stipules sessile and persistent; bracts oval. **Flowers** bright yellow, 1 inch or more long, in loose panicles 1 foot or more long, each branch often having 20 or more flowers; calyx 1/2 inch long. **Pods** bladder-shaped, 1 to 2 inches long, containing a number of small seeds, which at maturity become loose in the pod (20).

#### Propagation:

By seed.

#### Habitat:

Found in moist areas.

---

#### History:

Native to India. Of early introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. A profuse seeder which forms thick stands, shading out forage grasses. Under certain conditions may be poisonous to livestock.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Cytisus monspessulanus* L.

---

### FRENCH BROOM

---

#### Description:

An upright shrub, to 10 feet high; branches hairy when young. **Leaves** on short stalks, usually smooth above, hairy beneath; leaflets obovate or obovate-oblong, with an abrupt minute point, 1/3 to 3/4 inch long. **Flowers** bright yellow, fragrant, in a raceme which is 3- to 9-flowered and is short and leafy at the base. **Pods** reddish-brown, hairy (3).

#### Propagation:

By seed.

#### Habitat:

A weed at middle to higher elevations. At present found in the Puu Ka Pele area on Kauai.

---

#### History:

Native to the Mediterranean region and Canary Islands.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A heavy seeder which forms dense stands and shades out forage plants.

---





## LEGUMINOSAE (BEAN FAMILY)

---

*Cytisus scoparius* (L.) Link

Synonym: *Spartium scoparium* L.

---

### SCOTCH BROOM

---

#### Description:

A shrubby perennial, usually 3 to 6 feet, but sometimes over 10 feet high; branches many, stiff, angled, broomlike; many of the branches leafless or slightly leafy. **Leaves** short-petioled, with 1 to 3 leaflets, obovate or oblanceolate, 1/4 to 1/2 inch long, sparingly covered with short soft hairs. **Flowers** bright yellow, usually solitary, fragrant, pea-shaped, 3/4 inch long; calyx and pedicels nearly smooth. **Pods** brownish-black, flat, hairy only at margins (3, 16).

#### Propagation:

By seed.

#### Habitat:

At present found on the Island of Hawaii. A weed in pastures and wastelands.

---

#### History:

Native to Europe. Introduced to Hawaii as an ornamental; first collected in 1909 between Honokaa and Parker Ranch on the Island of Hawaii.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. A heavy seeder which forms dense stands. Of no forage value.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Desmodium tortuosum* (Sw.) DC.

Synonym: *Hedysarum tortuosum* Sw.

---

### FLORIDA BEGGARWEED

---

#### Description:

An annual, 1 to 8 feet high. **Stems** slender. **Leaflets** 3, with the terminal one a little larger than the others.

**Flowers** greenish-yellow or pinkish, small, pea-shaped, arranged in open panicles. **Seeds** 2 to 6 or even more to the pod, each seed in a separate compartment (20).

#### Propagation:

By seed. The compartments dehisce at the joints, disseminating each seed separately.

#### Habitat:

A weed in cultivated areas and wastelands.

---

#### History:

Native to West Indies and Central America.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Desmodium triflorum* (L.) DC.

Synonym: *Hedysarum triflorum* L.

---

### THREE-FLOWERED BEGGARWEED

---

#### Description:

A prostrate perennial. **Stems** slender, creeping, and branching into a thick mat from a rather stout root; stems usually a few inches long, may reach a foot in length if the plant is supported by other taller vegetation; younger stems slightly hairy. **Leaves** small, clover-shaped; leaflets 1/4 to 3/8 inch long; sometimes lower leaves with only one leaflet. **Flowers** bright purple, pea-shaped, but very small, usually three together on a slender stalk. **Pods** jointed, with one to five sections, each of which has a small bean-shaped seed (20).

#### Propagation:

By seed and creeping stems.

#### Habitat:

Persistent in lowland pastures, growing best under fairly moist conditions. A weed in lawns, though it forms a pleasant yard covering.

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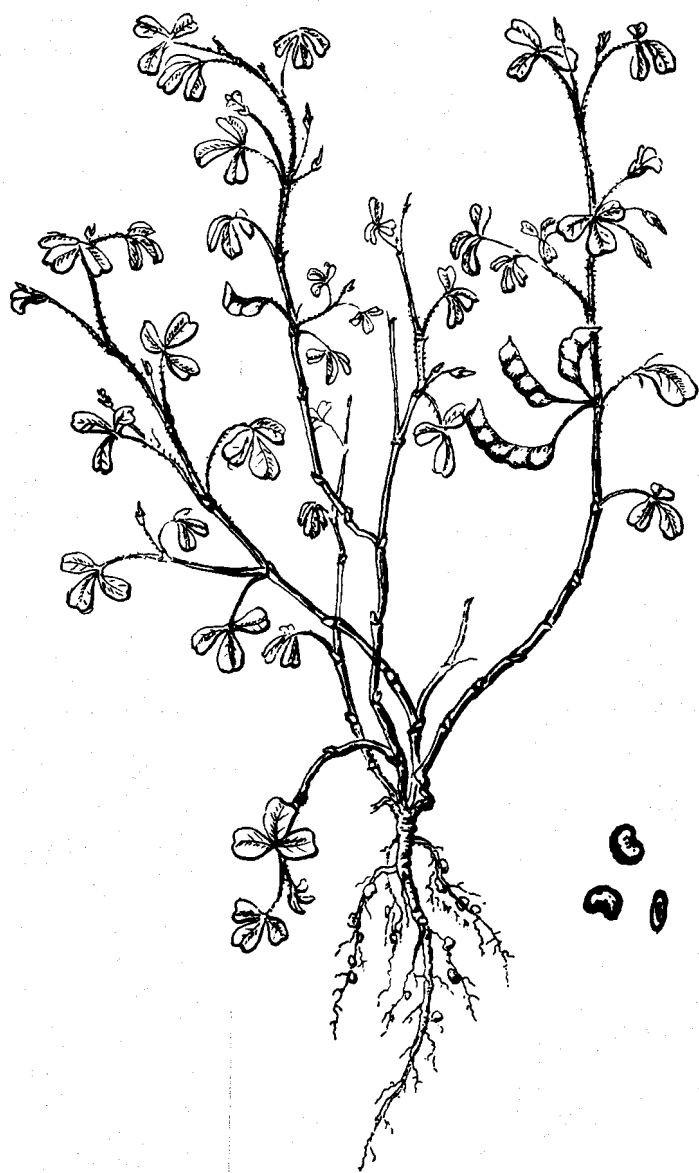
#### History:

Found throughout the tropics. Of early introduction to Hawaii.

#### Note:

Relished by livestock.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Desmodium uncinatum* (Jacq.) DC.

Synonyms: *D. sandwicense* E. Mey., *Hedysarum uncinatum* Jacq.

---

### SPANISH CLOVER

---

#### Description:

A perennial herb, 1 to 3 feet high, usually erect, but may be reclining with the tips growing upward or may be climbing.

**Leaflets** 3, ovate-lanceolate, 1-1/2 to 3 inches long, generally with whitish zones on each leaflet. **Flowers** purple, pink, or cream-white, small, pea-shaped, borne in terminal and axillary racemes. **Pods** covered with hooked hairs, almost sessile, 1 to 1-1/2 inches long, 5- to 10-jointed. **Seeds** bean-shaped, light brown (20).

#### Propagation:

By seed.

#### Habitat:

Widely distributed from sea level to about 6,000 feet. A weed in lawns and along roadsides. A useful pasture plant.

---

#### History:

Native to tropical America. Of early introduction to Hawaii.

---





## LEGUMINOSAE (BEAN FAMILY)

---

*Dolichos Lablab* L.

---

### LABLAB BEAN, HYACINTH BEAN

---

#### **Description:**

A smooth perennial or annual vine, 15 feet or more long.

**Leaflets** 3, ovate, 2-1/2 to 6 inches long, the end one stalked. **Flowers** whitish or pinkish, each about 3/4 inch long, borne at leaf axils in erect racemes about 6 inches long. **Pods** flattened, pointed, 2-1/2 to 5 inches long, 3/4 inch wide. **Seeds** 3 to 5, white or dark, thick, oval, marked with a distinct scar on one edge (15).

#### **Propagation:**

By seed.

#### **Habitat:**

Found at lower elevations twining over walls, trees, and fences. A weed in cultivated areas and waste places.

---

#### **History:**

Native to tropical Asia. Of early introduction to Hawaii.

#### **Note:**

Used for green manure and for fodder.

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## LEGUMINOSAE (BEAN FAMILY)

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*Indigofera suffruticosa* Mill.

Synonym, *I. anil* L.

---

### INDIGO

---

#### Description:

An erect, branching shrub, about 3 feet high; the more tender portions partially covered with short, flattened hairs. **Leaves** compound, 5 to 8 inches long; leaflets 9 to 11, each slightly stalked. **Flowers** light reddish, in clusters, pea-shaped. **Pods** packed in clusters resembling miniature bunches of bananas; each pod bent back, strongly curved, about 3/4 inch long, brown. **Seeds** 6 to 8, black (20).

#### Propagation:

By seed.

#### Habitat:

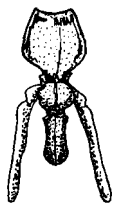
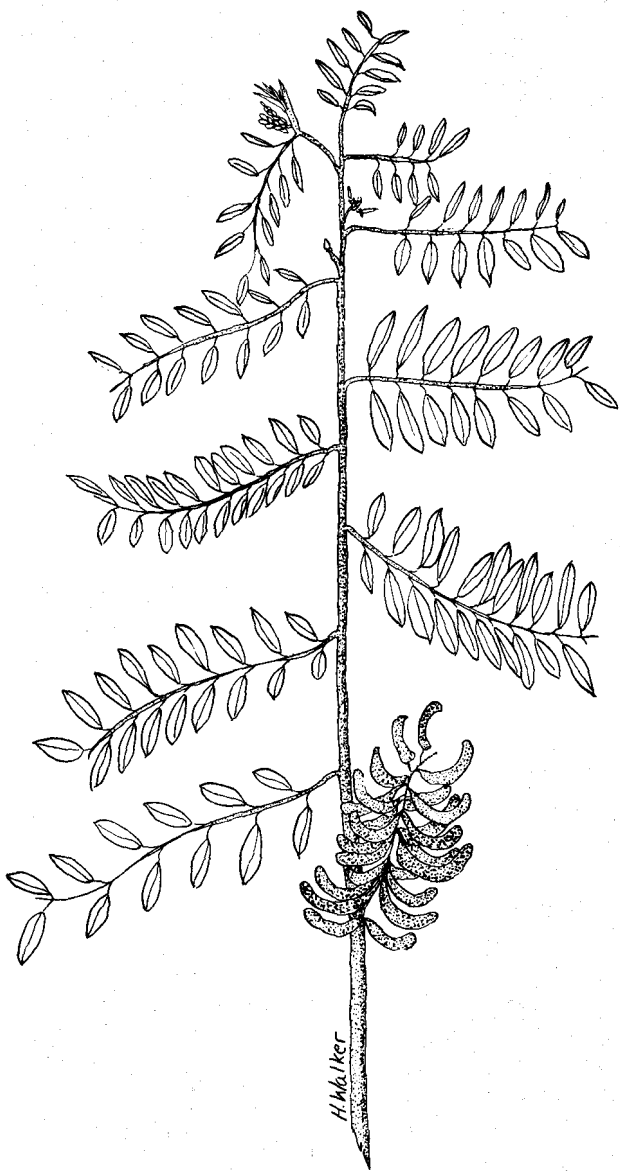
Found below about 3,500 feet. A weed in cultivated areas and waste places.

---

#### History:

Native to West Indies. Introduced to Hawaii about 1850.

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## LEGUMINOSAE (BEAN FAMILY)

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*Leucaena leucocephala* (Lam.) de Wit

Synonyms: *L. glauca* sensu Haw. bot., non (L.) Benth.; *Mimosa glauca* sensu Haw. bot., non L.; *M. leucocephala* Lam.

---

### HAOLE KOA, EKO

---

#### Description:

A small, thornless shrub or upright tree, 10 to 30 feet high.

**Leaves** compound; leaflets 20 to 30, oblong, 3/8 inch long.

**Flowers** white, in globular heads 1 to 1-1/2 inches in diameter, axillary, on long stalks. **Pods** flat, 4 to 6 inches long, nearly 1 inch wide, each containing 15 to 25 seeds.

**Seeds** oval, flattish, shiny brown (20).

#### Propagation:

By seed.

#### Habitat:

Common in dry and moist regions from sea level to 2,500 feet. A weed in cultivated areas and wastelands.

---

#### History:

Native to tropical America. Of early introduction to Hawaii.

#### Notes:

Grown for cattle fodder; the seeds, stems, leaves, and tops have a higher protein content than alfalfa. Causes loss of hair in nonruminant animals.

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## LEGUMINOSAE (BEAN FAMILY)

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*Mimosa pudica* L.

Synonyms: *M. unijuga* Duchass. & Walp.; *M. pudica* sensu Haw. bot., non L.

---

### SENSITIVE PLANT, HILAHILA

---

#### Description:

A perennial (in cooler climates, annual) herbaceous undershrub of low trailing habit. **Stems** with interstipular thorns and scattered prickles on internodes. **Leaves** normally with 1 or 2 compound leaflets; leaflets 12 to 25 pairs, oblong-linear, pointed, with hairy margins; when touched, leaflets are drawn back and folded up, together with the pinnae and petioles. **Flower heads** pinkish, ovoid; stamens numerous. **Pods** attached in a cluster, oblong, almost flat, pointed at the tip, edges armed with small, outstanding prickles. **Seeds** 1 to 5, small, flattened (20).

#### Propagation:

By seed. Bristles on seed pod cling to fur of animals and to clothing.

#### Habitat:

A troublesome weed in cultivated areas, lawns, and waste-lands.

---

#### History:

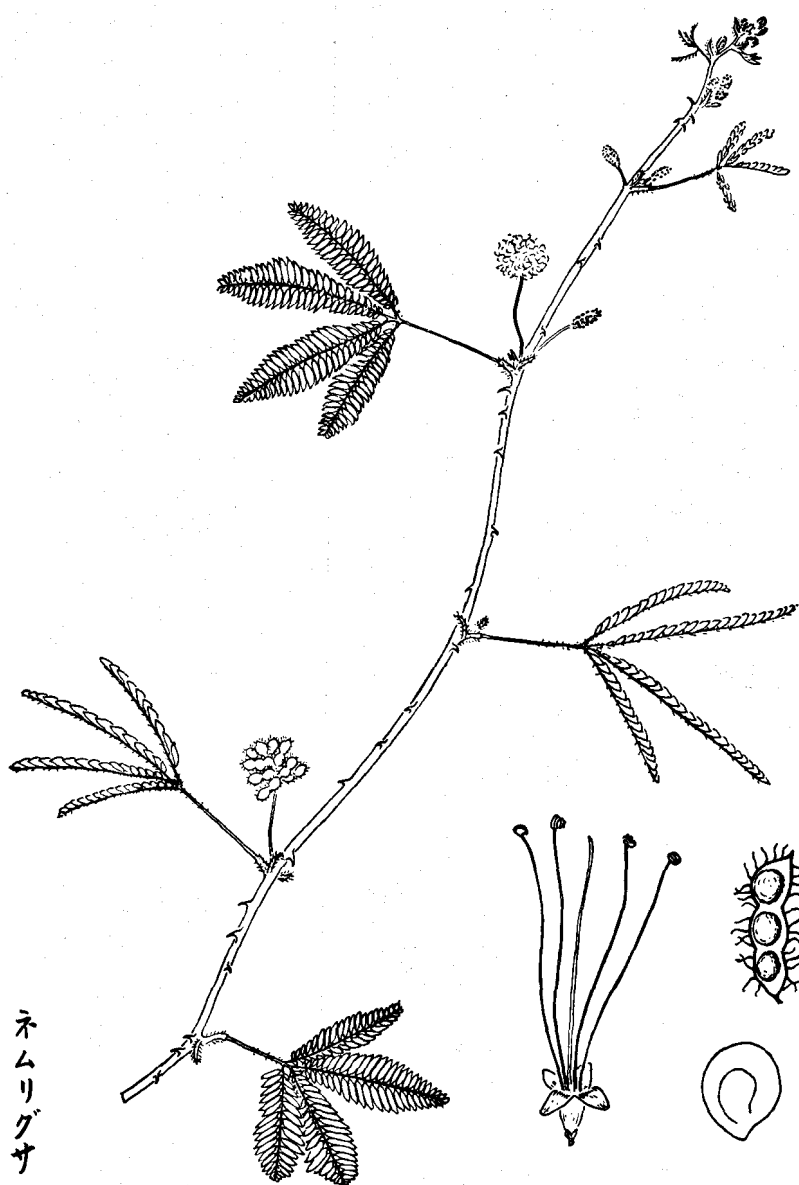
Native to tropical America. Introduced to Hawaii early in the 1800's.

#### Note:

Germinates quickly, crowding out other plants.

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## LEGUMINOSAE (BEAN FAMILY)

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*Rhynchosia minima* (L.) DC.

Synonym: *Dolichos minimus* L.

---

### RHYNCHOSIA

---

#### Description:

A densely woody herb. **Stems** about 1 foot high, twining, obtuse-angled. **Leaflets** 1/3 to 1-1/3 inches long, ovate-rhomboid, rather sharp pointed. **Flowers** yellow, in a raceme-like inflorescence; calyx lobes lanceolate-linear, the inferior about half as long as the corolla. **Pod** not constricted, oblong, 1/2 inch long, tapering at the base, hairy. **Seeds** black (3).

#### Propagation:

By seed.

#### Habitat:

At present a weed adjacent to cultivated areas.

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#### History:

Native to America. Of very recent introduction to Hawaii. At present found on western Kauai.

---



## LEGUMINOSAE (BEAN FAMILY)

---

*Spartium junceum* L.

---

### SPANISH BROOM

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#### Description:

An upright shrub, to about 10 feet high; branches slender, circular in cross-section, green, rushlike, sparingly leafy or almost leafless. **Leaves** oblanceolate to linear, entire, 1/2 to 1-1/2 inches long, bluish-green, sparingly covered with short soft hairs. **Flowers** yellow, fragrant, about 1 inch long, with ample standard. **Pods** linear, hairy, 2 to 3 inches long (3).

#### Propagation:

By seed.

#### Habitat:

At present found only on Kauai at middle elevations.

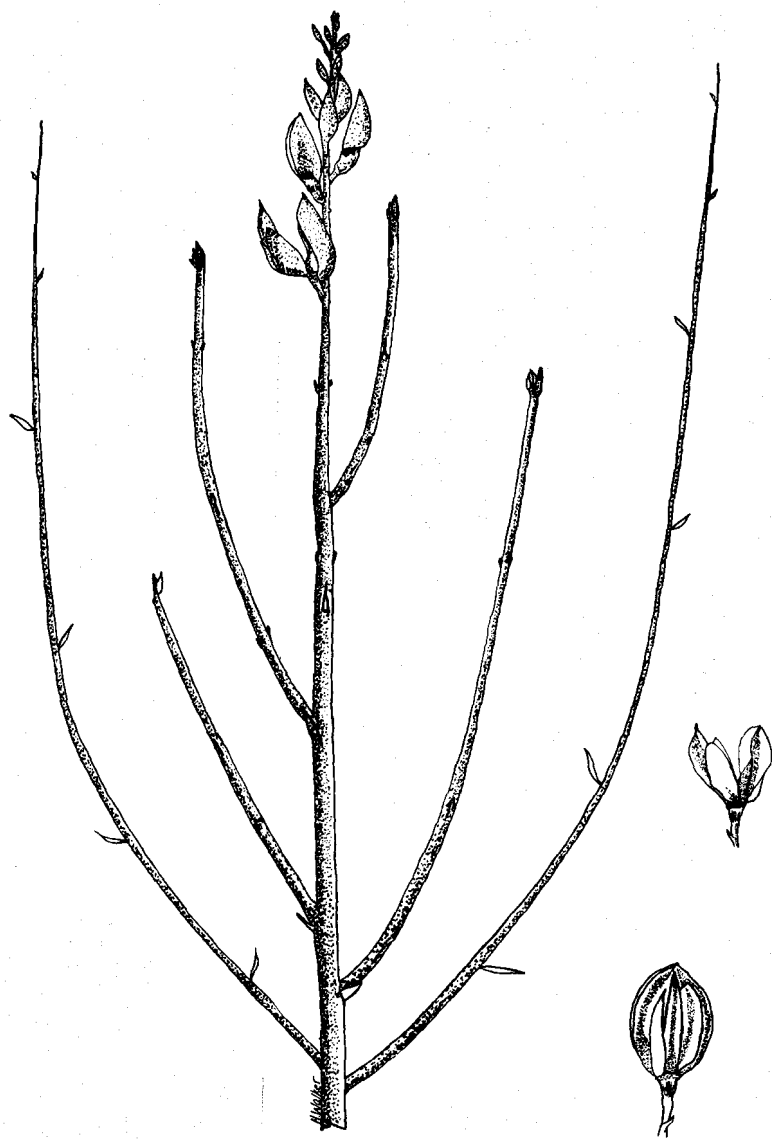
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#### History:

Native to southern Europe.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Forms dense stands and shades out desirable forage.



## LEGUMINOSAE (BEAN FAMILY)

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*Ulex europaeus* L.

---

### GORSE

---

#### Description:

A much branching, very spiny, rigid shrub, 2 to 6 feet high; young stems somewhat covered with short soft hairs; branches very leafy, ending in a sharp thorn. **Flowers** bright yellow, pea-shaped, solitary or in clusters on short axillary stalks; calyx yellowish, tubular but split nearly to the base in two places, one section has two points, the other three points. **Pods** short, each containing a few seeds (20).

#### Propagation:

By seed. The pods pop open, throwing seeds for some distance. Seeds also dispersed by animals and water.

#### Habitat:

A weed in pastures and wastelands around Olinda, Maui, and Humuula, Island of Hawaii.

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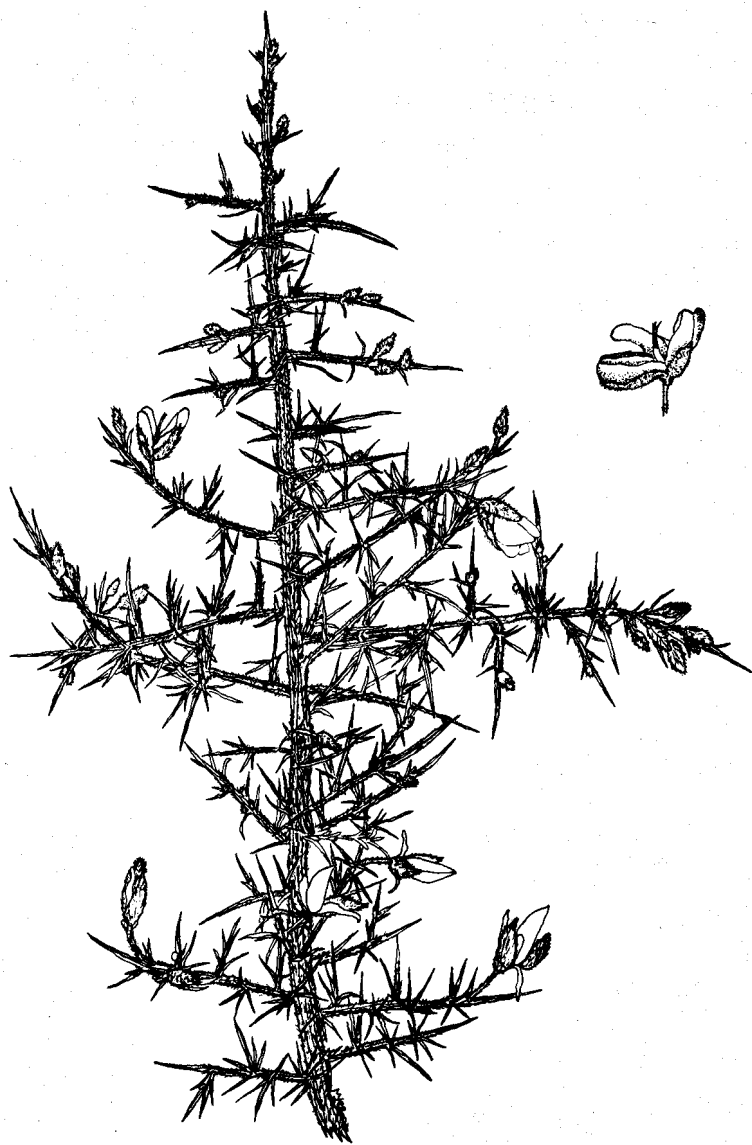
#### History:

Native to England and southern Europe. Purposely introduced to Maui as a hedge for sheep.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Has sharp thorns and forms impenetrable stands.

---



## GERANIACEAE (GERANIUM FAMILY)

---

*Erodium cicutarium* (L.) L'Her. ex Ait.

Synonym: *Geranium cicutarium* L.

---

### HERONS BILL, REDSTEM FILAREE

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#### Description:

An annual herb with foliage spreading in rosette-form. **Leaves** pinnate, the leaflets sessile. **Inflorescence** rose-red, on 4- to 6-inch-high stalks each bearing an umbel of 2 to 8 flowers; petals 5. **Seed** with a long beak which at maturity winds and unwinds with changes of moisture (20).

#### Propagation:

By seed.

#### Habitat:

A weed in dry, cultivated areas.

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#### History:

Native to the Mediterranean region.

#### Note:

A forage plant where more nutritious plants cannot grow.

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## OXALIDACEAE (WOOD-SORREL FAMILY)

---

*Oxalis corniculata* L.

---

### YELLOW WOOD-SORREL

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#### **Description:**

An annual or perennial herb, small and delicate, may be semi-erect, spreading and commonly prostrate with creeping stems, often 1 foot or more long; foliage dark green but in cooler months often with a dull purplish tinge. **Leaves** trifoliate, cloverlike, usually less than 1 inch across.

**Flowers** yellow, one to six arranged in umbels; petals 5, twice as long as the sepals. **Fruit** an oblong capsule, 1/3 to 2/3 inch long, pointed at the tip, slightly hairy, containing a number of brown, wrinkled seeds (20).

#### **Propagation:**

By seed and by creeping stems which send out roots and shoots from the nodes.

#### **Habitat:**

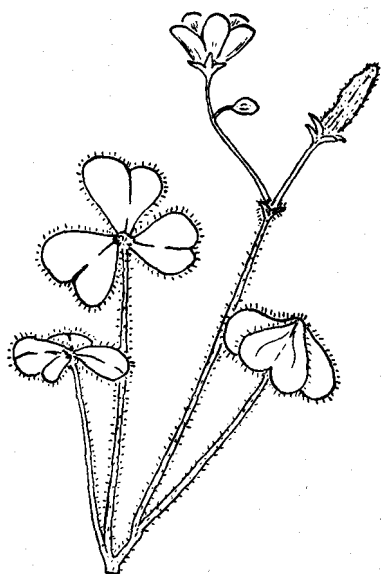
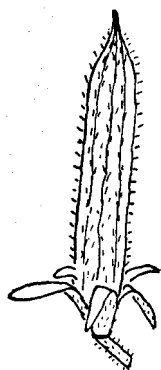
A weed in lawns and cultivated areas.

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#### **History:**

Native to Europe. Of early introduction to Hawaii.

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## OXALIDACEAE (WOOD-SORREL FAMILY)

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*Oxalis Martiana* Zucc.

Synonym: *Ionoxalis Martiana* (Zucc.) Small

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### PINK WOOD-SORREL

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#### Description:

A stemless plant with perennial bulbs or bulbous underground stems covered with brown, 3-ribbed scales. **Leaflets** 3, slightly hairy, broadly ovate, each about 1 inch across, with a notch at the tip of the midrib, on long leafstalks. **Flowers** red or purplish, in one or several umbels on branches of different lengths which rise above the leaves; veins greenish; stamens and pistil slightly hairy. **Fruit** a capsule, usually falls without maturing seeds (20).

#### Propagation:

By seed and by underground bulbs which send out leafstalks.

#### Habitat:

Found in wet regions. A weed in cultivated areas and lawns.

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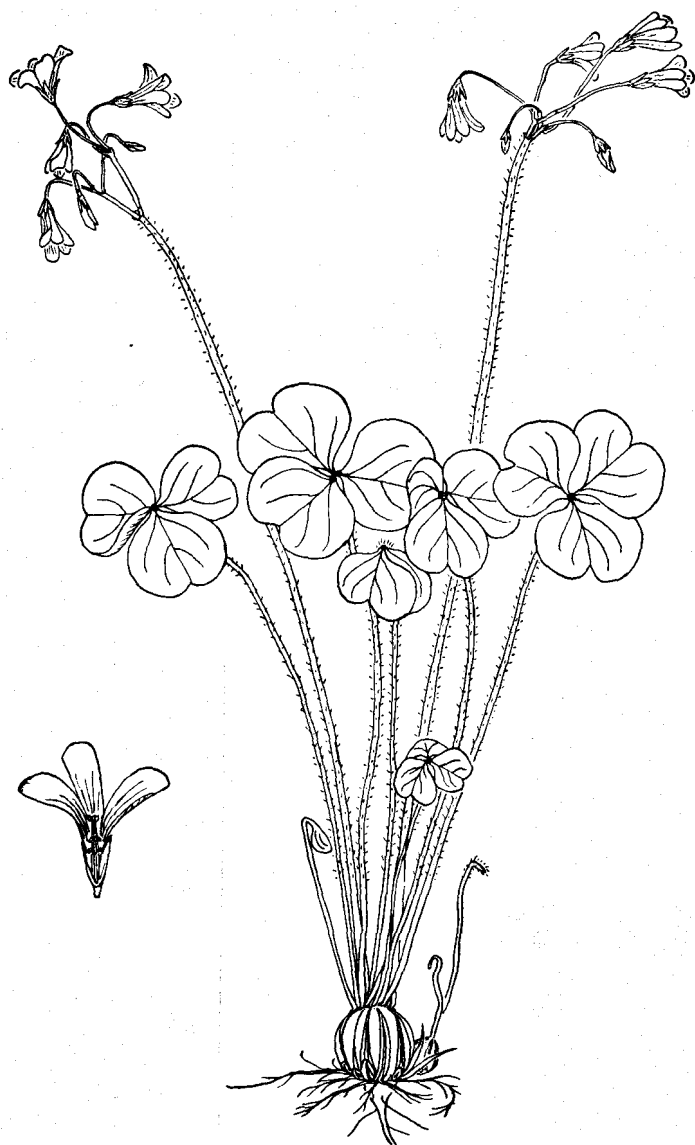
#### History:

Native to tropical South America.

#### Note:

Bulbs grow 4 to 8 inches below the surface.

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## ZYGOPHYLLACEAE (TRIBULUS FAMILY)

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*Tribulus Cistoides* L.

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### NOHU, FALSE PUNCTURE VINE

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#### Description:

A perennial trailing herb. **Stems** covered with short soft hairs, to 3 feet long. **Leaves** 2 to 3 inches long, pinnate, with generally eight pairs of small oblong leaflets with soft silky hairs on both surfaces, whitish underneath. **Flowers** yellow, on a stalk 1 inch or more in length; sepals 5, narrow; corolla 1-1/4 inches across; petals 5; stamens 10, one-third the length of the petals. **Fruit** nearly spherical, 3- to 5-lobed, each lobe with one seed and two stiff spines (15, 20).

#### Propagation:

By seed. Dispersed by ocean currents and animals.

#### Habitat:

Found in dry coastal regions. A weed in waste places.

---

#### History:

Found in all tropical regions.

#### Note:

The thorny seed coats are injurious to man and animals.

---



## ZYGOPHYLLACEAE (TRIBULUS FAMILY)

---

*Tribulus terrestris* L.

---

### PUNCTURE VINE

---

#### Description:

A prostrate annual. **Stems** trailing, 3/4 to 3 feet long, branching and radiating from the root, or nearly erect where growing in competition for light. **Leaves** opposite, divided into five to seven parts of oblong leaflets 1/8 to 1/2 inch long, densely covered with silky hairs. **Flowers** bright yellow, 1/3 inch across, solitary on short stalks in leaf axils; petals 5. **Fruit** a cluster of five flat, spiny burs, each bur with two or more seeds and two strong vicious spines on its back (16).

#### Propagation:

By seed. Spreads and grows rapidly.

#### Habitat:

At present found in marginal beach areas on Kauai and Maui. A weed in cultivated areas and lawns.

---

#### History:

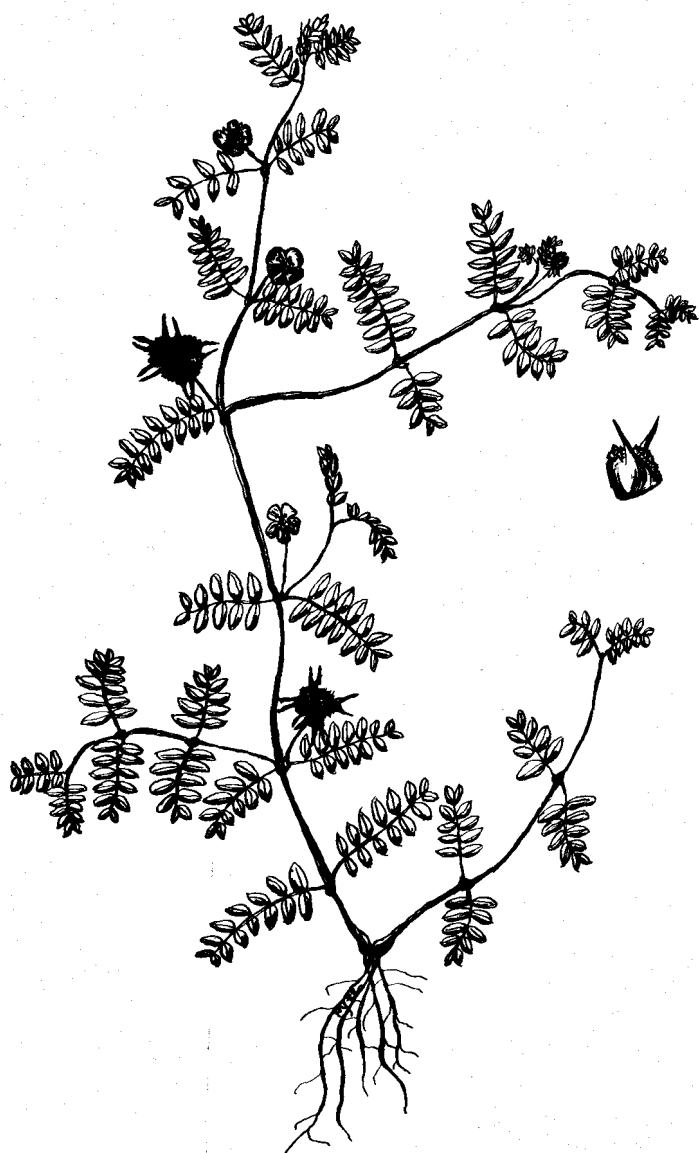
Native to southern Europe.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Has spiny burs which penetrate the feet of animals, shoes, and automobile tires.

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## EUPHORBIACEAE (SPURGE FAMILY)

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*Euphorbia glomerifera* (Millsp.) L. C. Wheeler

Synonyms: *E. hypericifolia* sensu Haw. bot., non L.; *E. bifida* sensu St. John, non H. & A.; *Chamaesyce glomerifera* Millsp.

---

### GRACEFUL SPURGE

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#### Description:

An erect, smooth, branching plant, 1 to 2 feet high, with brittle, pinkish stems and a milky sap. **Leaves** opposite, 3/4 to 1 inch long, 1/4 to 3/8 inch wide, oblong, thin, often pinkish, margin minutely toothed, leafstalk short. **Flowers** white or pink, in a cluster at leaf axils, on stalks 1/2 to 3/4 inch long; each petal with a round gland at its base. **Fruit** a capsule, 3-lobed, with one seed in each lobe. **Seed** dark red, 1/32 inch long (22).

#### Propagation:

By seed. A single plant produces thousands of seeds; the capsule explodes, throwing seeds for several feet.

#### Habitat:

Found in dry and in moderately moist regions. A weed in cultivated areas and lawns.

---

#### History:

Of accidental introduction to Hawaii.

#### Notes:

Stems break off easily. Has a long taproot.

---



## EUPHORBIACEAE (SPURGE FAMILY)

---

*Euphorbia hirta* L.

Synonym: *E. pilulifera* sensu Am. and Haw. authors, non L.

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### GARDEN SPURGE

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#### Description:

A small upright annual, 6 to 8 inches high. **Stems** more or less hairy. **Leaves** opposite, ovate-rhomboidal, short petioled, with finely serrate margins, and with a dull greenish or brownish cast, usually blotched with darker markings on the upper surface. **Flowers** very small, without corollas, but in general of typical *Euphorbia* form -- greenish in color and massed on very short axillary flower stalks. **Fruit** a capsule, hairy. **Seeds** about 6, elongated, wrinkled (20).

#### Propagation:

By seed.

#### Habitat:

Found in moist and in dry regions. A weed in cultivated areas, lawns, and along roadsides.

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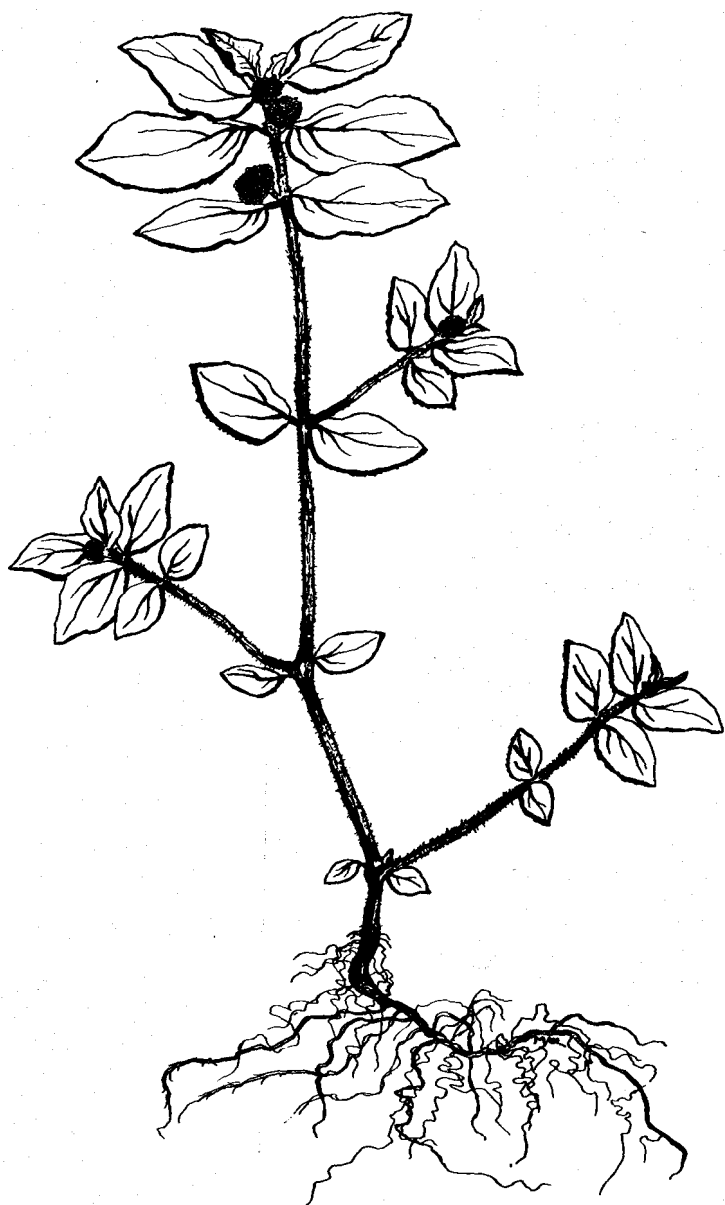
#### History:

Of tropical origin. Introduced early to Hawaii.

#### Note:

Has slight poisonous properties.

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## EUPHORBIACEAE (SPURGE FAMILY)

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*Euphorbia Peplus* L.

Synonym: *Tithymalus Peplus* (L.) Gaertn.

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### PETTY SPURGE

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#### Description:

An annual, 1/2 to 1 foot high. **Stems** smooth, slender, erect or nearly so; upper portions branching into leafy, umbel-like inflorescence. **Leaves** scattered on stem, oblong or obovate, 1/2 inch to 1-1/4 inches long, entire, narrowed into a slender petiole; leaves at base of umbel whorled; bracts in inflorescence oppositely arranged, sessile, ovate. **Flowers** greenish, very small, bearing four crescent-shaped glands with ends prolonged into slender points; stamens 4; ovary 3-lobed, extended nodding beyond the rest of flower. **Seed** oblong, whitish, with an appendage at the seed scar, outer surfaces marked with four rows of pits, the two inner surfaces grooved (20).

#### Propagation:

By seed.

#### Habitat:

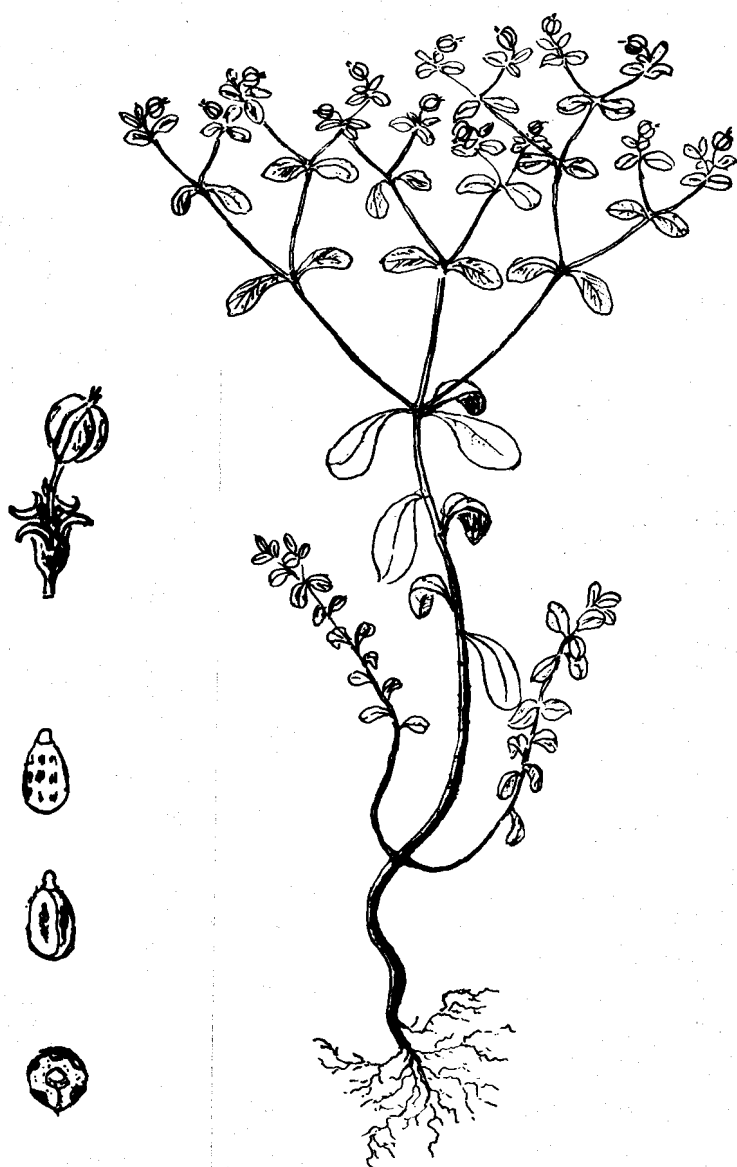
Prefers cool, higher elevations. Found in woods. A weed in cultivated areas.

---

#### History:

Native to Europe. Of early introduction to Hawaii.

---



## EUPHORBIACEAE (SPURGE FAMILY)

---

*Euphorbia prostrata* Ait.

---

### PROSTRATE SPURGE

---

#### Description:

A prostrate annual herb, branched, hairs in a row on side of branches. **Leaves** opposite, almost sessile, oblong to oval with rounded ends, 1/4 to 3/8 inch long, about 1/4 inch wide. **Flowers** small, borne in clusters in leaf axils. **Fruit** a capsule, 3-lobed, pinkish. **Seeds** 3, minute, dark purple-black (18).

#### Propagation:

By seed.

#### Habitat:

Widespread.

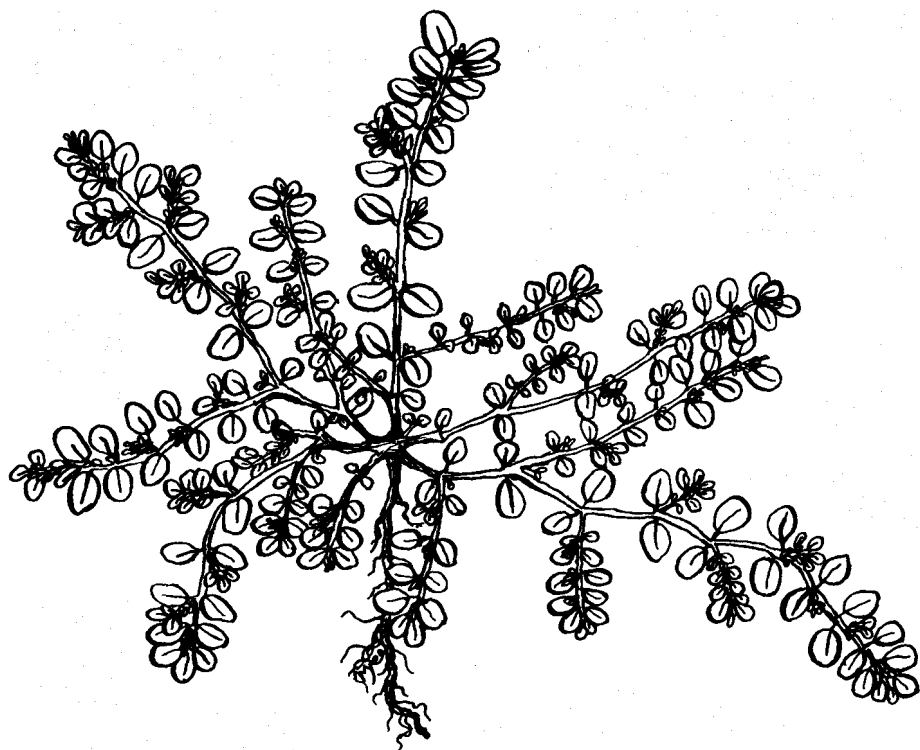
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#### History:

Native to tropical and subtropical America.

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## EUPHORBIACEAE (SPURGE FAMILY)

---

*Phyllanthus debilis* Klein ex Willd.

Synonym: *P. Niruri* sensu Hbd., Neal, Haselwood, non L.

---

### NIRURI

---

#### Description:

An annual, erect or mostly reclining with tips pointing upward; branches angular in the upper portion; all parts of stems, leaves, and capsules smooth and green. **Leaves** regularly arranged one above another in two opposite rows, one row on each side of the stem; blades oblong or lanceolate, about 3/8 inch long and 3/16 inch wide, on very short leafstalks with small stipules at base. **Inflorescence** with male and female flowers on the same plant, minute, solitary in leaf axils; petals 6, whitish with a longitudinal green stripe; stamens 3; pistil compound. **Fruit** a capsule, nearly spherical, depressed at stem, with 6 compartments, each containing a triangular seed shaped like a section of an orange (20).

#### Propagation:

By seed.

#### Habitat:

Prefers moist soils in shady areas. A weed in cultivated areas.

---

#### History:

Native to tropical Asia. Introduced to Hawaii from China.

#### Note:

Niruri rapidly develops a long taproot.

---



## EUPHORBIACEAE (SPURGE FAMILY)

---

*Ricinus communis* L.

---

### CASTOR BEAN

---

#### Description:

An herbaceous annual in temperate climates; a half-woody perennial in warmer regions, even becoming treelike and 8 to 15 feet high. (In some tropical countries, it may reach a height of 30 feet.) **Stems** between nodes hollow. **Leaves** large, palmate, 6 inches to 1-1/2 feet across, varying greatly in color -- according to season and variety. **Male flowers** cream-white, arranged in one part of the inflorescence; female flowers make up the remainder. **Fruit** a capsule, many clustered together, usually 3-seeded. **Seeds** very oily, produced in large numbers (20).

#### Propagation:

By seed. When ripe, the capsules split and cast seeds 25 feet or more.

#### Habitat:

Common in lowland areas. A weed in pastures, rangelands, and waste places.

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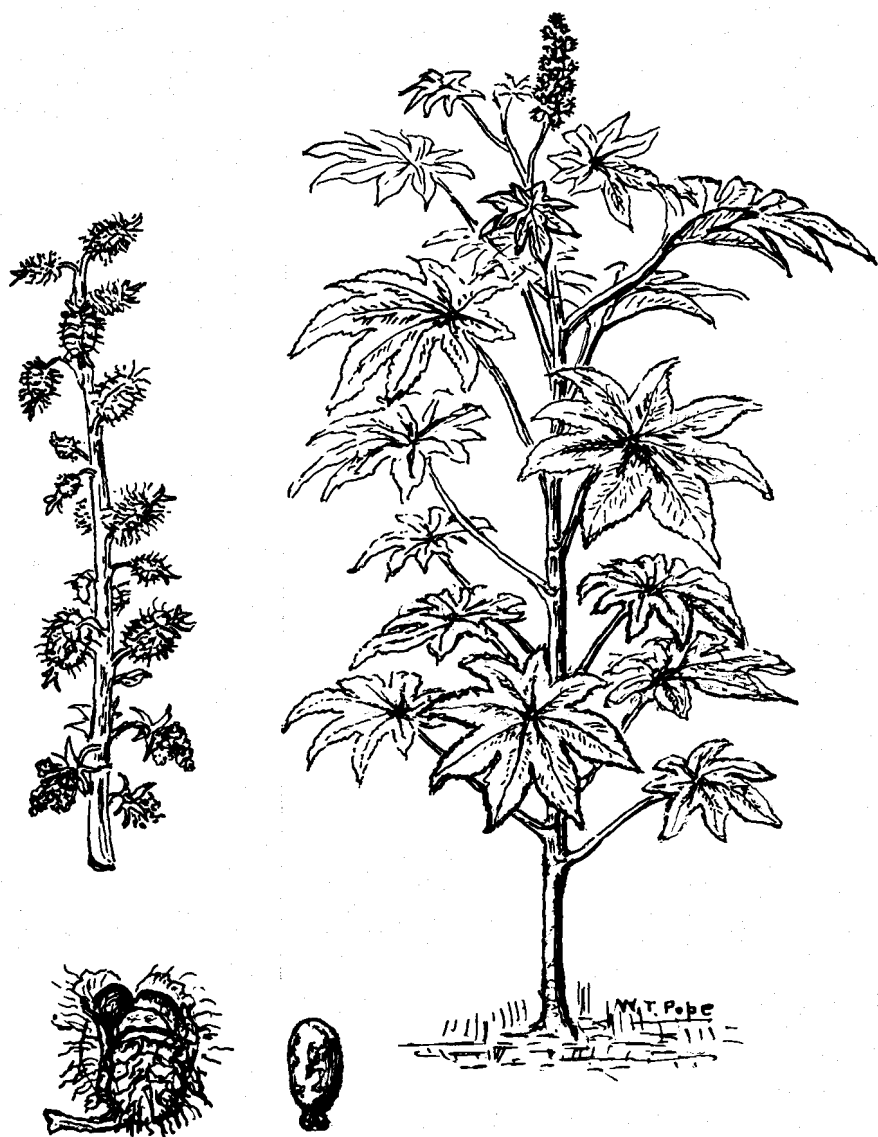
#### History:

Probably native to tropical Africa. Of early introduction to Hawaii.

#### Note:

Seed extremely poisonous.

---



## TILIACEAE (LINDEN FAMILY)

---

*Triumfetta Bartramia* L.

Synonym: *Waltheria Fauriei* Lévl.

---

### BUR BUSH

---

#### Description:

A shrubby, hairy, annual herb, 1 to 5 feet high. **Leaves** toothed and vary from round to narrow to 3-lobed. **Flowers** yellow, small, 5-parted, closely clustered at leaf axils. **Fruit** a capsule, dry, nearly spherical, about 1/4 inch in diameter, covered with short down and longer, hairless, hooked spines (15).

#### Propagation:

By seed.

#### Habitat:

A weed in pastures, rangelands, and cultivated areas.

---

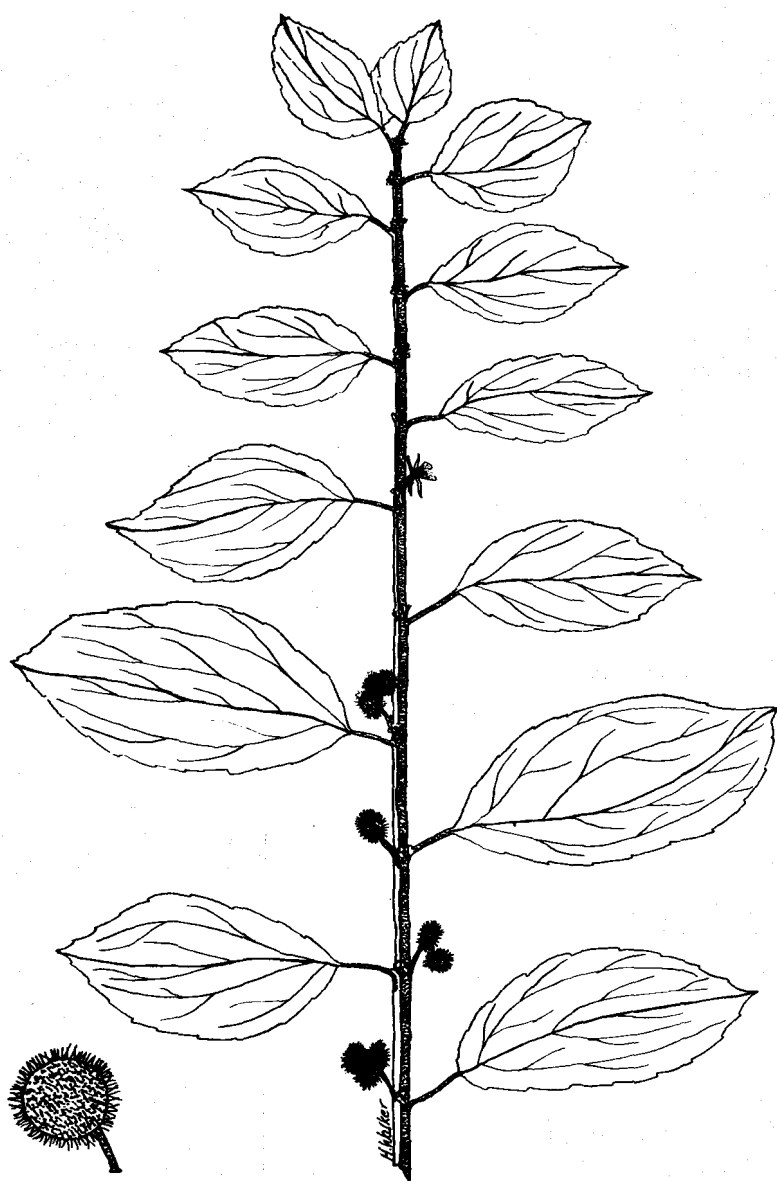
#### History:

Native to the tropics of the Eastern Hemisphere. Introduced to Hawaii before 1895.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Spreads rapidly, forms dense stands, and crowds out forage plants.

---



## TILIACEAE (LINDEN FAMILY)

---

*Triumfetta semitriloba* (L.) Jacq.

---

### SACRAMENTO BUR

---

#### Description:

An open-branched, perennial shrub, to 10 feet high, with hairy stems. **Leaves** hairy on both sides, ovate, oblong, or slightly 3-lobed. **Flowers** yellow, more openly arranged at leaf axils.

**Fruit** a round bur with hooked spines bearing scattered hairs, which are bent backward (15, 16).

#### Propagation:

By seed.

#### Habitat:

Areas from sea level to 3,500 feet with 30 to 60 inches of rainfall. A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Native to the tropics of the Eastern Hemisphere.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Spreads rapidly, crowding out forage plants. Of little or no forage value.





## MALVACEAE (HIBISCUS FAMILY)

---

*Abutilon grandifolium* (Willd.) Sweet

Synonym: *A. molle* (Ortega) Sweet; *A. kauaiense* Hochr.; *A. mollissimum* (Cav.) Sweet; *Sida grandifolia* Willd.; *S. mollis* Ortega

---

### HAIRY ABUTILON

---

#### Description:

A perennial undershrub, 2 to 8 feet high, often much branching with dense, dark green foliage. **Stems** woody below, inner bark containing a fine fiber. **Leaves** ovate to heart-shaped, 1-1/2 to 3 inches long and nearly as broad, sharply pointed with extended tip, margins irregularly serrate or scalloped, upper surfaces slightly hairy, lower quite hairy; leafstalk 1 to 2 inches long.

**Flowers** orange, axillary, solitary or occasionally two together; flower stalk 1 to 2 inches long and with joint in the upper third; sepals 5 or 6, all united into a whorl near base where attached to ovary, but finally breaking away at maturity of the fruit; corolla broadly cupped, 3/4 to 1 inch across; petals 5 or 6; styles 10, each with a dark stigma; stamens about 60, massed around pistil. **Fruit** a capsule, about 3/4 inch across, consisting of 10 units which upon ripening split along top and upper third of outer edges. **Seeds** black, about 5, nearly kidney-shaped (20).

#### Propagation:

By seed.

#### Habitat:

A weed in semi-moist pastures and rangelands below 3,500 feet.

---

#### History:

Native to South America.

---



## MALVACEAE (HIBISCUS FAMILY)

---

*Gossypium sandvicense* Parl.

Synonym: *G. tomentosum* Nutt. in Seem

---

### NATIVE COTTON, MAO

---

#### Description:

A spreading shrub, 4 to 6 feet high, with matted soft wool-like hairiness. **Leaves** soft, thick, 3- to 5-lobed, heart-shaped at base. **Flowers** yellow, axillary on short stalks; bracts 3, with margins cut into pointed lobes; petals 5. **Fruit** a capsule, ovoid, 3-valved, surface pitted, each compartment holding 3 or 4 seeds wrapped in a firmly adhering brown fiber about 1/2 inch long (20).

#### Propagation:

By seed.

#### Habitat:

Found along the coast, usually in dry regions.

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#### History:

Endemic to Hawaii.

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## MALVACEAE (HIBISCUS FAMILY)

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*Hibiscus tiliaceus* L.

Synonyms: *Pariti tiliaceum* (L.) Britton, *Paritium tiliaceum* (L.) St. Hil.

---

### HAU

---

#### Description:

A much-branched tree, 12 feet high or more; sometimes growing as a gnarled, crooked tree or spreading horizontally in impenetrable thickets. **Leaves** rounded, heart-shaped, 2 to 12 inches in diameter, leathery, margins entire or scalloped, on top nearly smooth, white beneath, with matted hairs. **Flowers** in profusion at and near branch tips, 2 to 3 inches long, opening as bright yellow cups, some with dark red centers, changing to dull orange later in the day and to dull red by night; calyx cup 1 inch long, 5-toothed, downy, persistent; bracts shorter, 10 to 12 in number. **Fruit** a capsule, downy, ovoid, 1 inch long, each of the 5 valves with 3 smooth seeds (15).

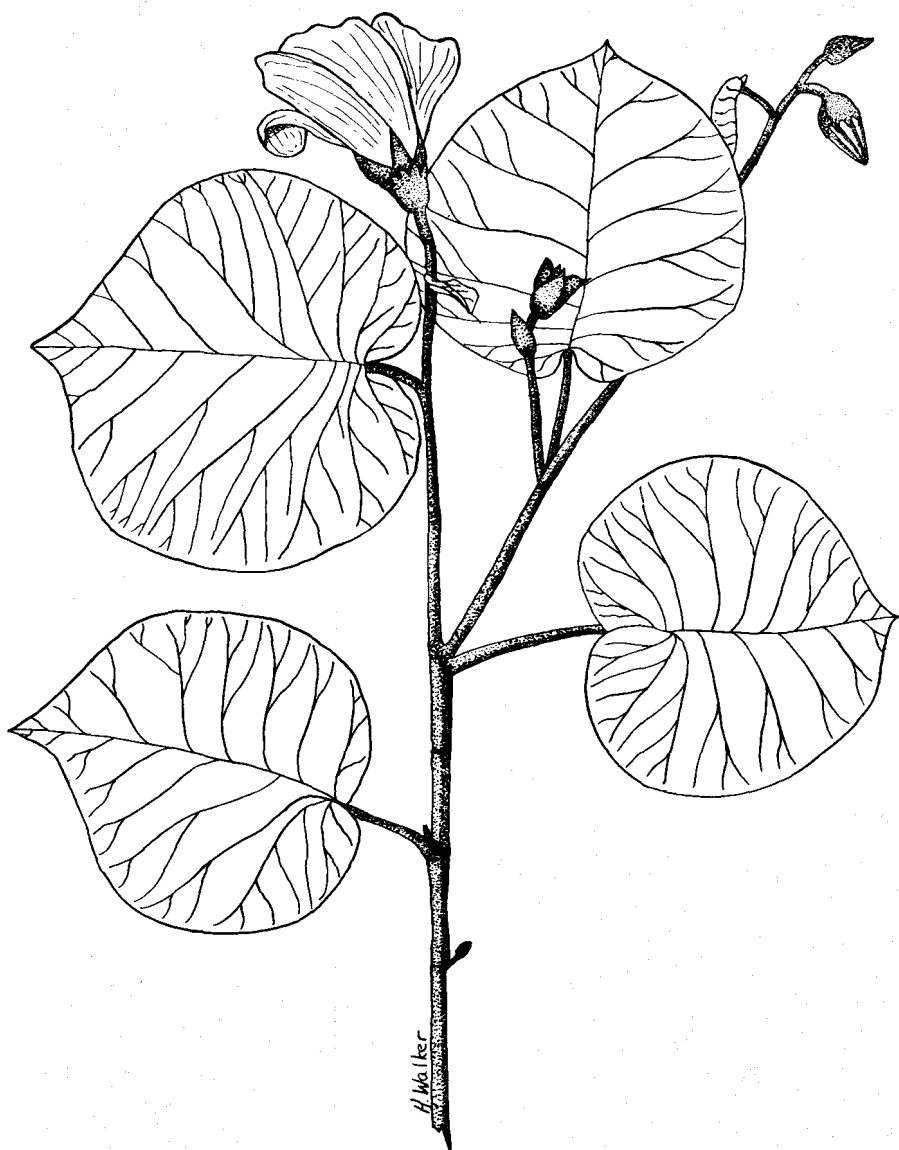
#### Propagation:

By seed, cuttings, and sprouts from the base.

#### Habitat:

Common near wet regions. A weed in pastures, rangelands, and waste places.

---



## MALVACEAE (HIBISCUS FAMILY)

---

*Malachra alceaefolia* Jacq.

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### MALACHRA

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#### Description:

An annual herb, to 8 feet high, coarse, branched or unbranched, more or less hairy. **Leaves** rounded, somewhat shallow-lobed, toothed, 2 to 6 inches wide, somewhat indented at the base, on long leafstalks; stipules bristlelike, at leaf axils. **Flowers** yellow, in round heads, on stalks at leaf axils and stem tips; leafy bracts heart-shaped, mixed with flowers, whitish at the base, to 2/3 inch long; calyx cup-shaped, 5-lobed, one-third as long as petals; petals 5, 1/2 inch long. **Fruit** a capsule, with five smooth 1-seeded units (15).

#### Propagation:

By seed.

#### Habitat:

A potential weed pest in pastures at lower elevations.

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#### History:

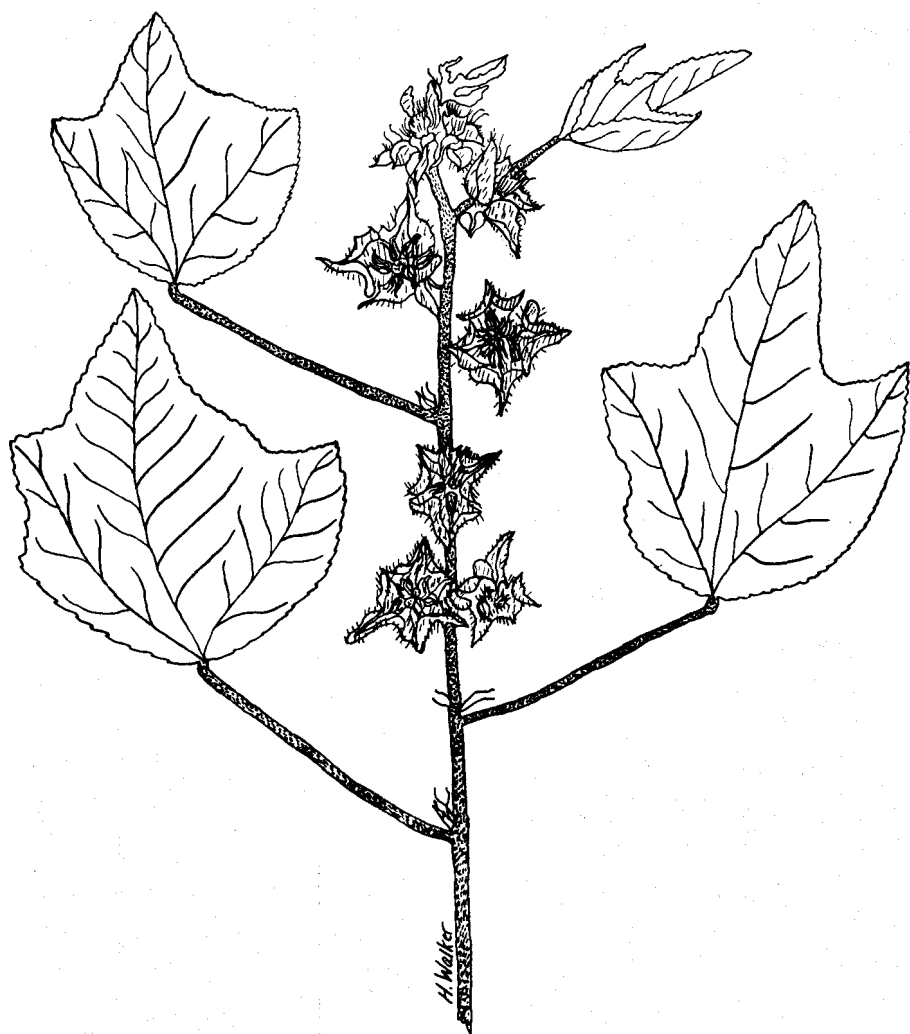
Native to tropical America.

#### Notes:

Declared **noxious** in Regulation NW 10. A prolific seeder which grows rapidly.

---





## MALVACEAE (HIBISCUS FAMILY)

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*Malva parviflora* L.

Synonym: *M. rotundifolia* sensu Haw. bot., non L.

---

### CHEESE WEED

---

#### Description:

A hairy biennial or perennial, 1 to 3 feet high, with a deep taproot having many long and spreading secondary roots. **Stems** round, becoming very fibrous with age. **Leaves** 1 to 5 inches across, circular in shape, with five to nine toothed to scalloped lobes, on leafstalks 3 to 6 inches long. **Flowers** pinkish, 5/16 to 3/4 inch across, borne in axillary clusters; pistils often as many as 15 in number. **Fruit** a capsule, with about 15 wedge-shaped units arranged in a circle, each containing one seed (20).

#### Propagation:

By seed.

#### Habitat:

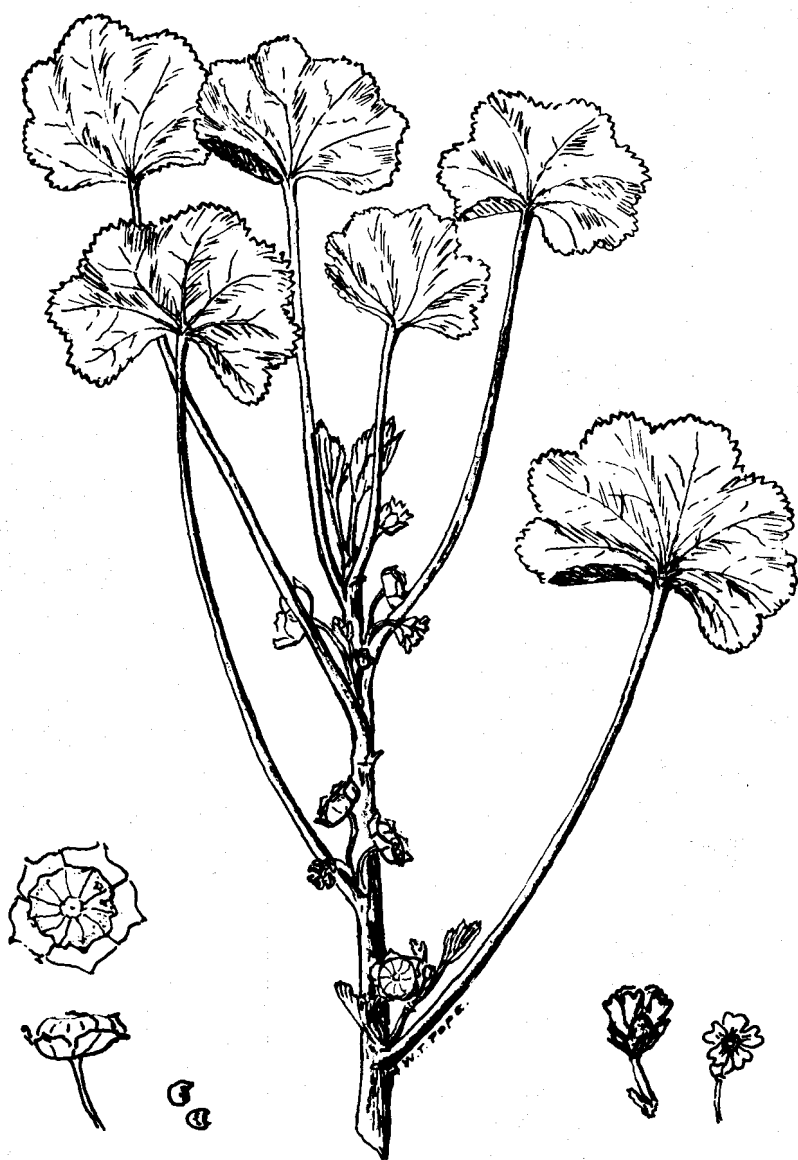
Found at middle and lower elevations. A weed in cultivated areas, pastures, along roadsides, and in wastelands.

---

#### History:

Native to Europe. First collected in Hawaii in 1826-27.

---



## MALVACEAE (HIBISCUS FAMILY)

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*Malvastrum coromandelianum* (L.) Garcke

Synonyms: *M. tricuspidatum* Gray, *Malva coromandeliana* L.

---

### FALSE MALLOW

---

#### Description:

A small, woody shrub, to about 3 feet high; stems and branches many, reddish, dotted with flat-pressed hairs. **Leaves** ovate or narrow, toothed, deep-veined, hairy. **Flowers** orange, appearing a few at a time. **Fruit** like a wheel-shaped "cheese", which is divided by 8 to 12 spikelike, bristle-bearing, 1-seeded units (15).

#### Propagation:

By seed.

#### Habitat:

A weed in pastures, waste places, and along roadsides.

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#### History:

A widely distributed weed in tropical regions.

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## MALVACEAE (HIBISCUS FAMILY)

---

*Sida cordifolia* L.

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### SIDA, LEI ILIMA

---

**Description:**

A shrub, 3 to 5 feet high. **Leaves** woolly, ovate, generally heart-shaped, 1 to 3 inches long, margins toothed, thick with prominent veins. **Flowers** orange-yellow, sometimes densely clustered; petals about 1/3 inch long. **Fruit** with 7 to 12 units, each tipped with two long, barbed beaks (15).

**Propagation:**

By seed.

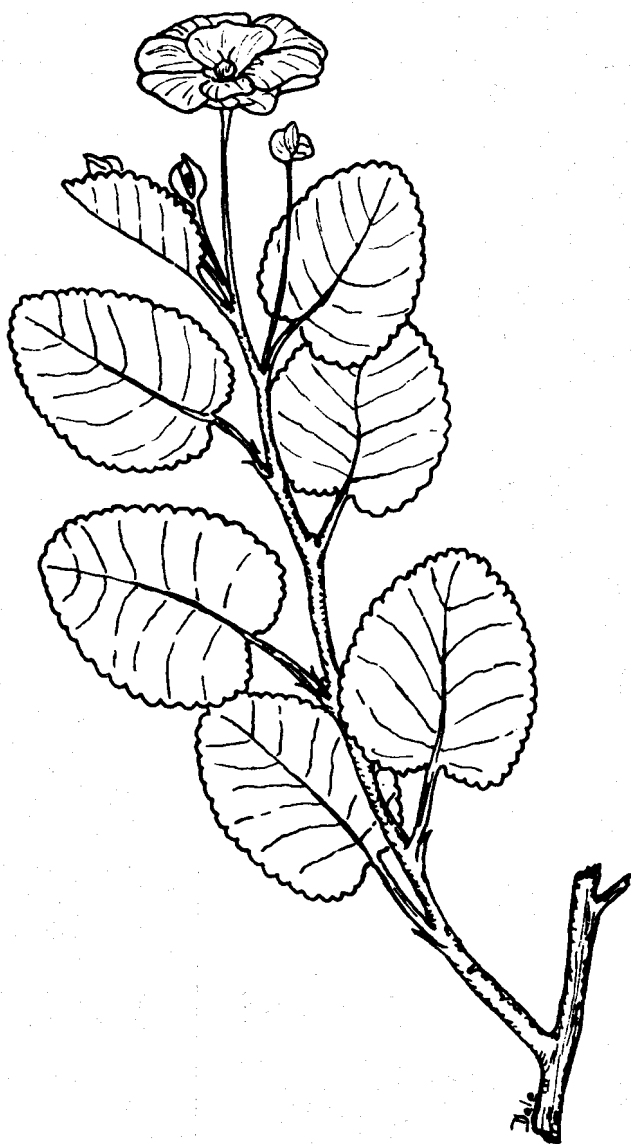
**Habitat:**

A weed in pastures and wastelands.

---

**History:**

Found throughout the tropics.



## MALVACEAE (HIBISCUS FAMILY)

---

*Sida rhombifolia* L.

---

### CUBA JUTE, RHOMBOID ILIMA

---

#### Description:

A partly herbaceous plant, 2 to 3 feet high; younger parts containing minute soft hairs. **Stems** tough, woody below, herbaceous above. **Leaves** rhomboidal or ovate, 1 to 2 inches long, 1/2 to 3/4 inch wide, margins toothed except at the wedge-shaped base, green above, pale underneath; leafstalks 1/4 inch long or less, with point of attachment to blade having a jointed enlargement.

**Flowers** pale yellow, solitary, on stalks 3/4 to 1-1/4 inches long and jointed about the middle, 4 or 5 flowers often clustered in terminals of older branches; corolla 1/3 inch across; petals 5. **Fruit** with 8 to 10 units, each about 1/8 inch long and with two short terminal awns. **Seed** 1, black, almost pyramidal-triangular (20).

#### Propagation:

By seed.

#### Habitat:

A weed in pastures, wastelands, and lawns.

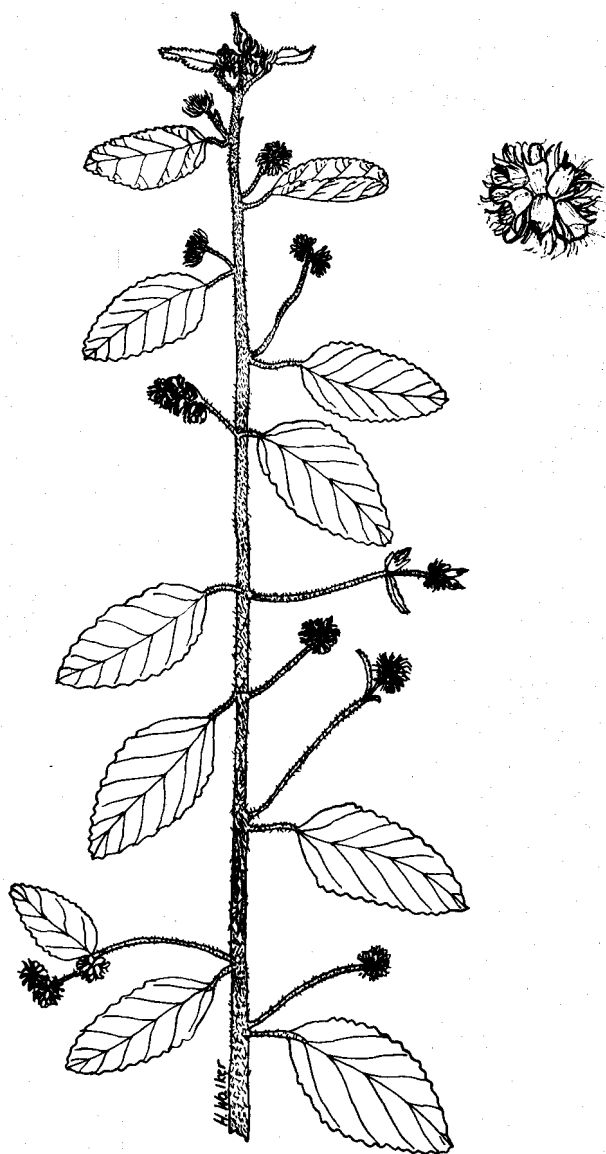
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#### History:

Found in tropical and subtropical regions.

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## MALVACEAE (HIBISCUS FAMILY)

---

*Sida spinosa* L.

---

### PRICKLY SIDA

---

#### Description:

A partly herbaceous weed, 1 to 2 feet high, (annual in temperate climates). **Young stems** covered with minute short soft hairs. **Leaves** alternate, 1 to 2 inches long, 1/4 to 1/2 inch wide, linear, oblong or lanceolate, with tip either blunt or pointed, margins serrate except at the rounded base, green above, pale green underneath; leafstalks about half as long as blades; stipules small, pointed, at base of leafstalk, one at base and two lateral, usually curved downward. **Flowers** light yellow, on short stems at leaf axils, either solitary or two or three together; corolla about 3/8 inch across; petals 5. **Fruit** ovoid, containing 5 units, each splitting at the top into 2 beaks. **Seed** triangular, smooth, dark brown (20).

#### Propagation:

By seed.

#### Habitat:

Thrives in hot, dry regions at lower elevations. A weed in pastures, cultivated areas, and wastelands.

---

#### History:

Native to tropical America. Noted in Hawaii prior to 1870.

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## MALVACEAE (HIBISCUS FAMILY)

---

*Urena lobata* L.

---

### ARAMINA

---

#### Description:

A hairy, shrubby plant, 2 to 8 feet high; branches reddish.

**Leaves** rounded to ovate, indented at base, largest 3-1/2 inches long and 4 inches wide, more or less angled, commonly divided in three parts in the upper half, toothed, lighter beneath, palmately 5-veined, 3 veins with slit glands at their base. **Flowers** short-stemmed, 5-parted; bracts green, slightly longer than sepals; sepals light green, shorter than petals; petals pink and red, 1/2 inch long. **Fruit** a capsule, rounded, about 1/3 inch in diameter, with five downy, 1-seeded units covered with bristles, each bristle with a circle of barbs at the tip (15).

#### Propagation:

By seed. Barbs on seed cling to fur of animals and to clothing.

#### Habitat:

A weed on Kauai and Oahu in cultivated areas.

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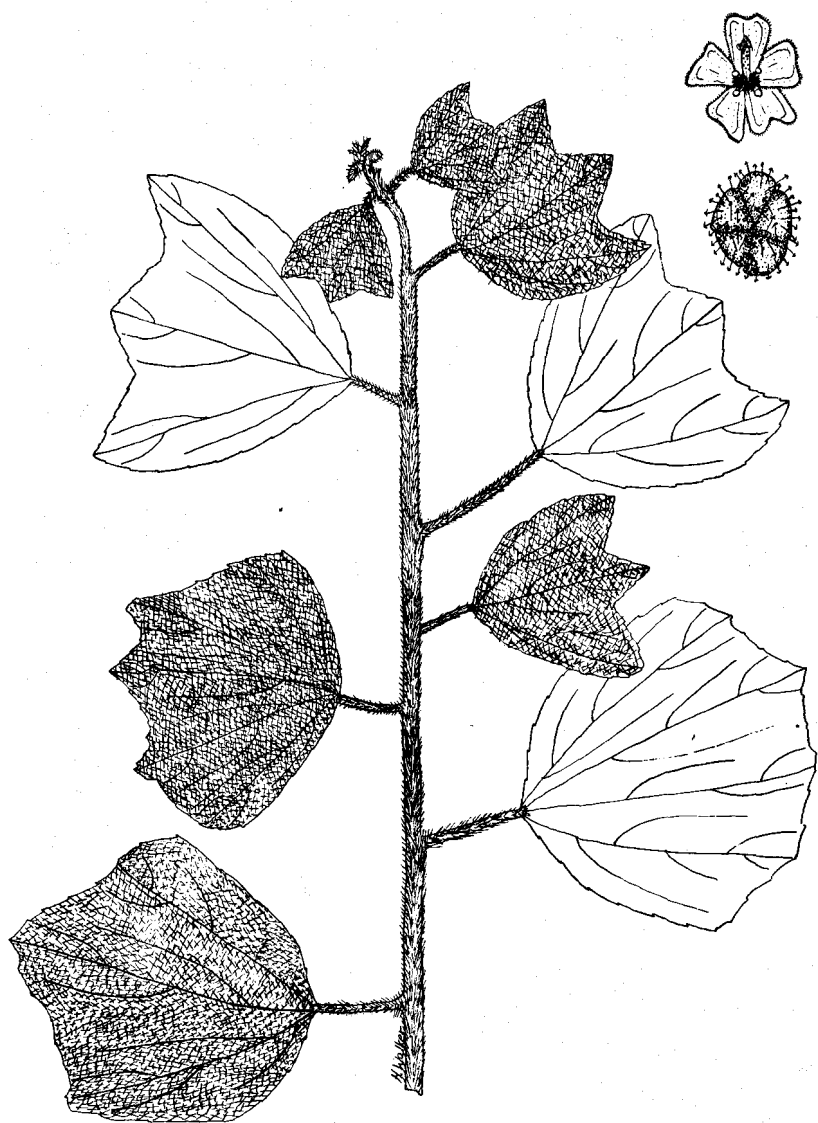
#### History:

Found in many tropical countries. Accidentally introduced to Hawaii from China.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Forms dense stands, crowding out forage plants.

---



## STERCULIACEAE (COCOA FAMILY)

---

*Waltheria americana* L.

---

### HIALOA, WALTHERIA

---

#### Description:

A small, shrubby, down-covered perennial, 1 to 5 feet high.

**Stems** terminal, slightly cottony. **Leaves** ovate-oblong, 1 to 2 inches long, on short leafstalks, velvety, pinnately veined, with entire margins. **Flowers** orange-yellow, small, 5-parted, in axillary masses of bristly green cotton. **Fruit** a single capsule with 2 seeds (20).

#### Propagation:

By seed.

#### Habitat:

Found in dry regions at lower elevations. A weed in cultivated areas and waste places.

---

#### History:

Native to tropical America. Of very early introduction to Hawaii.

---



## GUTTIFERAE (MANGOSTEEN FAMILY)

---

*Hypericum perforatum* L.

---

### ST. JOHNSWORT, KLAMATH WEED

---

#### Description:

A perennial herb, 1 to 2 feet high. **Stems** upright, 2-edged. **Leaves** sessile, oblong to linear, obtuse, black-dotted, 1/2 to 1 inch long. **Flowers** bright yellow, 1/2 to 1 inch across, in terminal, more or less flat-topped clusters; sepals sharp pointed; stamens in three close clusters. **Fruit** a capsule, ovoid, glandular (3).

#### Propagation:

By seed and short runners.

#### Habitat:

A weed at high elevations. At present found at 6,000 to 7,000 feet on Hualalai Volcano, Island of Hawaii.

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#### History:

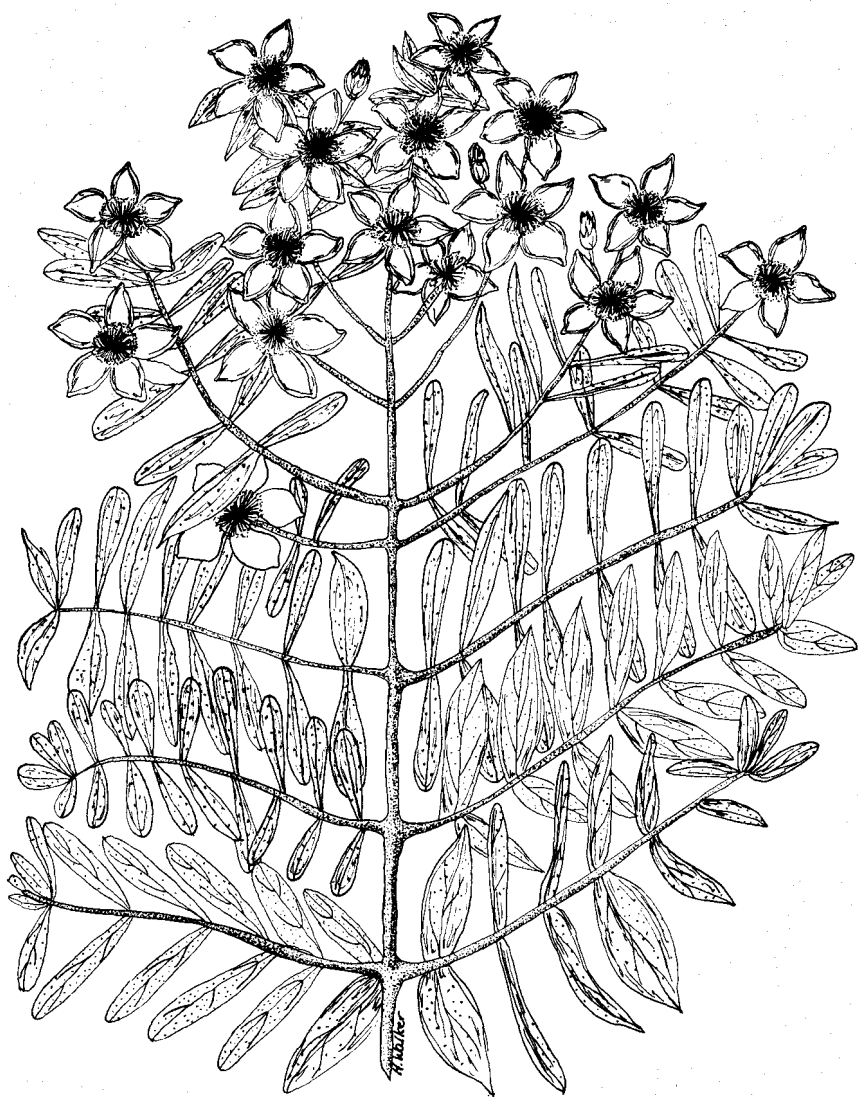
Native to Europe.

#### Notes:

Declared **noxious** in Regulation 2. Poisonous to livestock. Spreads rapidly.

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## PASSIFLORACEAE (PASSION FLOWER FAMILY)

---

*Passiflora foetida* L.

---

### SCARLET-FRUITED PASSION FLOWER, LOVE-IN-A-MIST

---

#### Description:

An herbaceous, smooth-stemmed vine, trailing or climbing by means of tendrils. **Leaves** 1 to 1-1/2 inches long, blade cut halfway down three times, heart-shaped at the base, surface uneven, velvety, margin entire, venation distinct.

**Flowers** solitary, axillary, 1-3/4 to 2-1/4 inches across, on short stalks; bracts 3, finely cut, below calyx, surrounding the flower bud and developing around the fruit as a screen previous to its maturity; within the corolla is a collar or corona consisting of a double row of fringes, purple in the throat, then a band of white, and the outer two-thirds of the circle of fringe is a delicate blue; stamens 5, anthers large, filaments united into a tube; stigma 3-parted. **Fruit** scarlet, globular, 3/4 inch in diameter, tough rind of three or four sections, placenta dry. **Seeds** flat, numerous (20).

#### Propagation:

By seed.

#### Habitat:

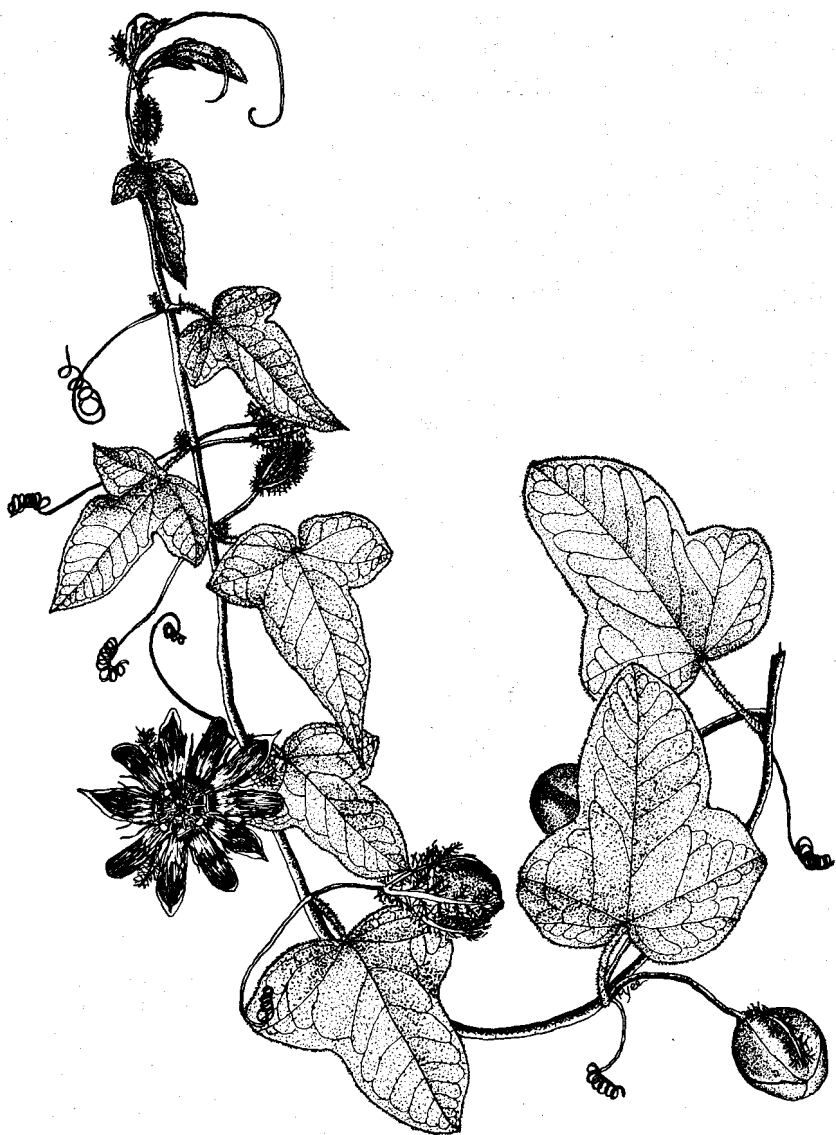
Found along roadsides and in wastelands.

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#### Notes:

Grows rapidly during wet season. Leaves give off a disagreeable odor when disturbed.

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## PASSIFLORACEAE (PASSION FLOWER FAMILY)

---

*Passiflora pulchella* HBK.

---

### WING-LEAF PASSION FLOWER, TWO-LOBED PASSION FLOWER

---

#### Description:

A climbing vine, to about 20 feet long. **Stems** triangular, smooth, rather woody. **Tendrils** long, slender, somewhat woody. **Leaves** hairless, shiny above, a whitish coating below, with three prominent veins, with two large lateral lobes and almost no center lobe, lateral lobes rounded. **Flowers** fragrant, single from leaf axils; bracts 3; sepals 5, whitish, about 1 inch long and less than 1/2 inch wide, narrow-oblong; petals 5, white with bluish tinge; collar or corona of two rows, violet. **Fruit** small, round, about 1/2 inch in diameter, purplish to black. **Seeds** few, not observed as seedling (5).

#### Propagation:

By any small stem or root section. Easily spread by mechanical means.

#### Habitat:

A weed in cultivated areas and waste places.

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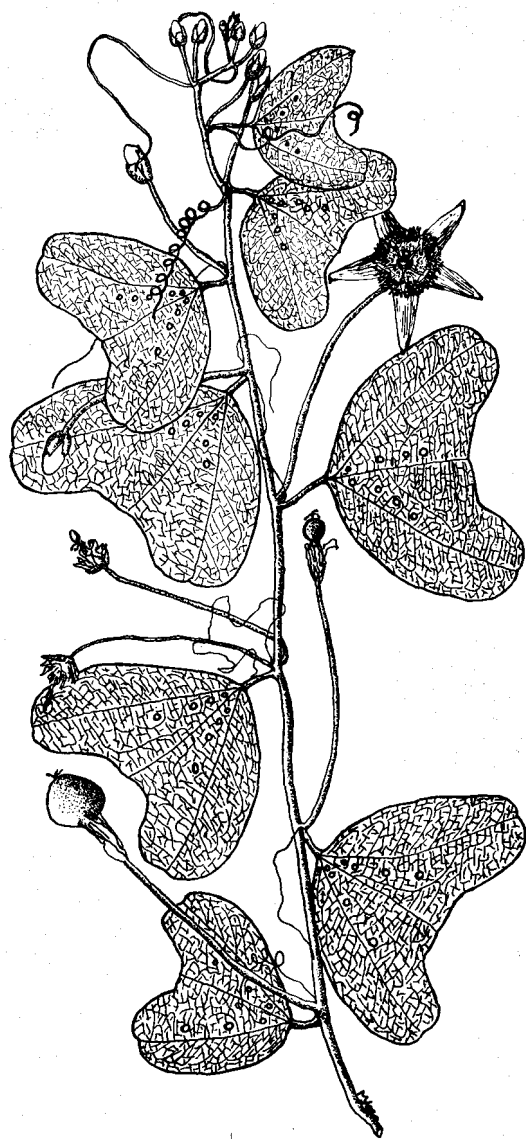
#### History:

Native to tropical America. Probably introduced as an ornamental to the Island of Hawaii before 1926.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Plant twines around cultivated crops. Roots exceedingly deep (5 feet or more) with underground stems and branches. Very difficult to control.

---



## CACTACEAE (CACTUS FAMILY)

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*Opuntia megacantha* Salm-Dyck

Synonym: *O. tuna* sensu Hbd., non (L.) Mill.

---

### CACTUS, PRICKLY PEAR, PANINI

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#### Description:

An erect, wide-spreading, treelike plant, frequently 10 to 12 feet high; joints deep green, mostly oval with rounded ends, 10 to 14 inches long, 6 to 10 inches wide; numerous tubercles, first bearing fleshy horn-shaped leaves which are soon shed but around their bases remain minute barbed bristles. From each of the tubercles develop 3 to 6 spreading spines, unequal in length, 3/4 to 2 inches long. **Flowers** yellow blended with red, 3 to 4 inches wide. **Fruit** pear-shaped or rounded, 1 to 1-1/2 inches in diameter, bearing tubercles with pointed leaves and small bristles as in the fleshy sections of the stem; maturing fruit drops the small rudimentary leaves but retain the numerous clusters of prickly bristles; ripe fruit dark purple, edible (20).

#### Propagation:

By seed and by broken-off pads. Cattle, horses, pigs, and birds eat the fruit and scatter the seeds. New infestations are started by pads broken off by animals.

#### Habitat:

Found in arid, rocky regions at lower elevations to 3,000 feet. A weed in pastures, rangelands, and waste places.

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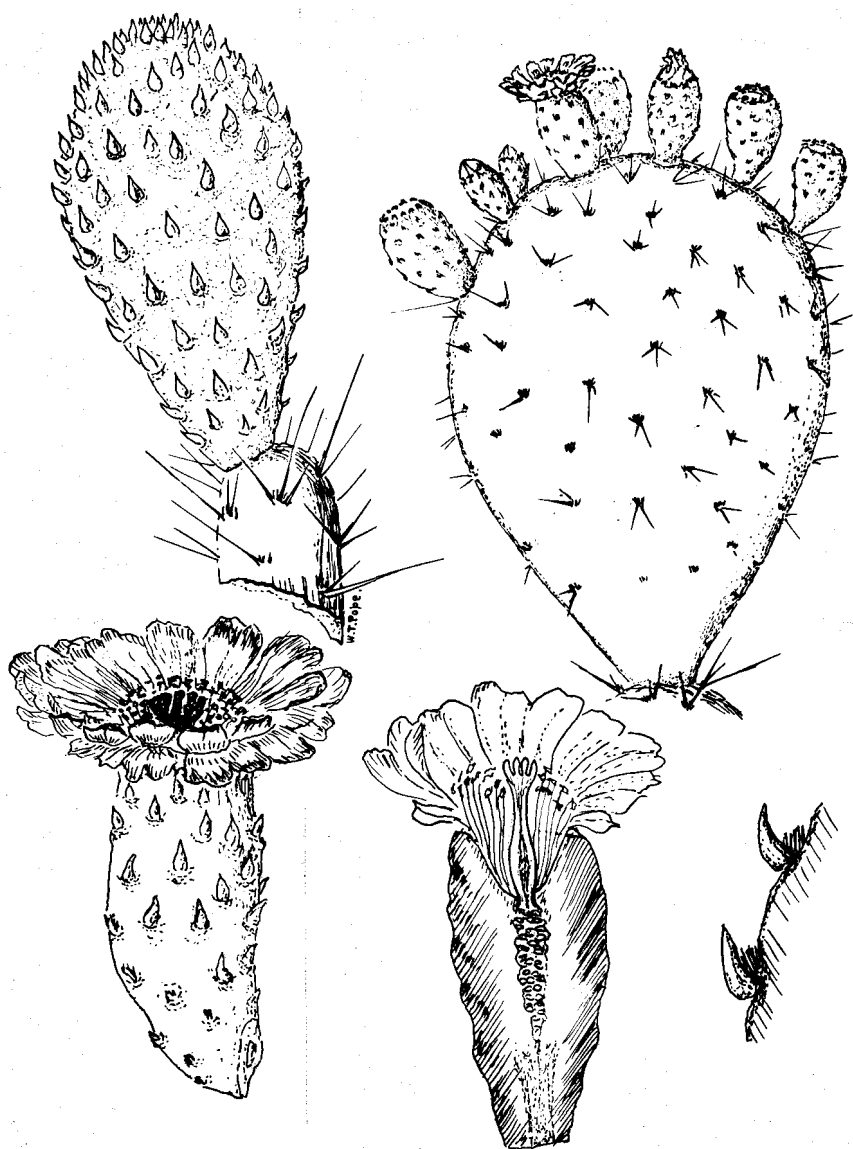
#### History:

Native to Mexico. Introduced to Hawaii for forage about 1809.

#### Notes:

Declared **noxious** for State land leases. Grows fast, crowding out more palatable and nutritious forage plants.

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## LYTHRACEAE (CRAPE MYRTLE FAMILY)

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*Cuphea carthagenensis* (Jacq.) Macbride

Synonyms: *C. Balsamona* C. & S.; *Lythrum carthagenensis* Jacq.; *Parsonsia* Pinto (Vand.) Heller; *C. hyssopifolia* sensu Hbd., non HBK.; *Balsamona* Pinto Vand.

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### TAR WEED

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#### Description:

A sticky-hairy, shrubby perennial, 1 to 1-1/2 feet high; branches cylindrical, green or red. **Leaves** ovate, less than 1 inch long. **Flowers** magenta (purplish-red), 1/4 inch long; petals 6; calyx tube 12-ribbed, irregularly swollen at the base (15).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and waste places.

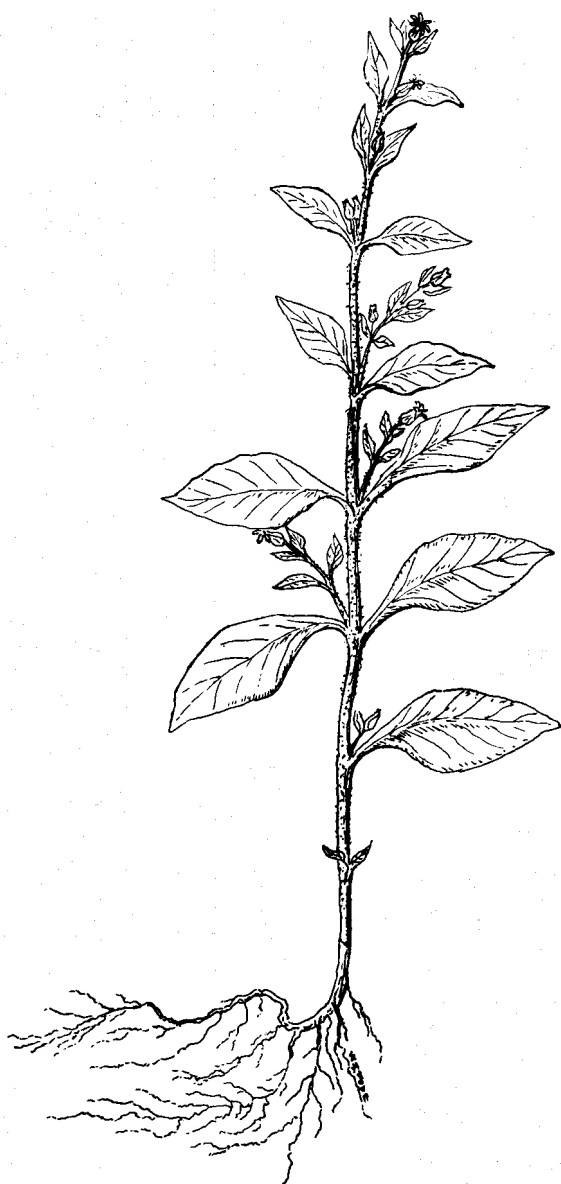
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#### History:

Native to tropical America. A long-established weed in Hawaii.

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## RHIZOPHORACEAE (MANGROVE FAMILY)

---

*Rhizophora Mangle* L.

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### AMERICAN MANGROVE

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#### Description:

A shrub or small tree, sometimes 25 feet high; foliage dense and dark green. **Leaves** 2 to 6 inches long, leathery, oval with rounded ends to long-obovate. **Flowers** pale yellow, two or three on a stalk; sepals 5, lanceolate; petals 5, linear, cut halfway down. **Fruit** small, capsulelike, 1-seeded, germinating while yet attached to parent plant and then dropping the seedling which will remain alive for a long time (20).

#### Propagation:

By seed. Dispersed by ocean currents.

#### Habitat:

Found in salt marshes and mud flats along the coast. A weed in waste places.

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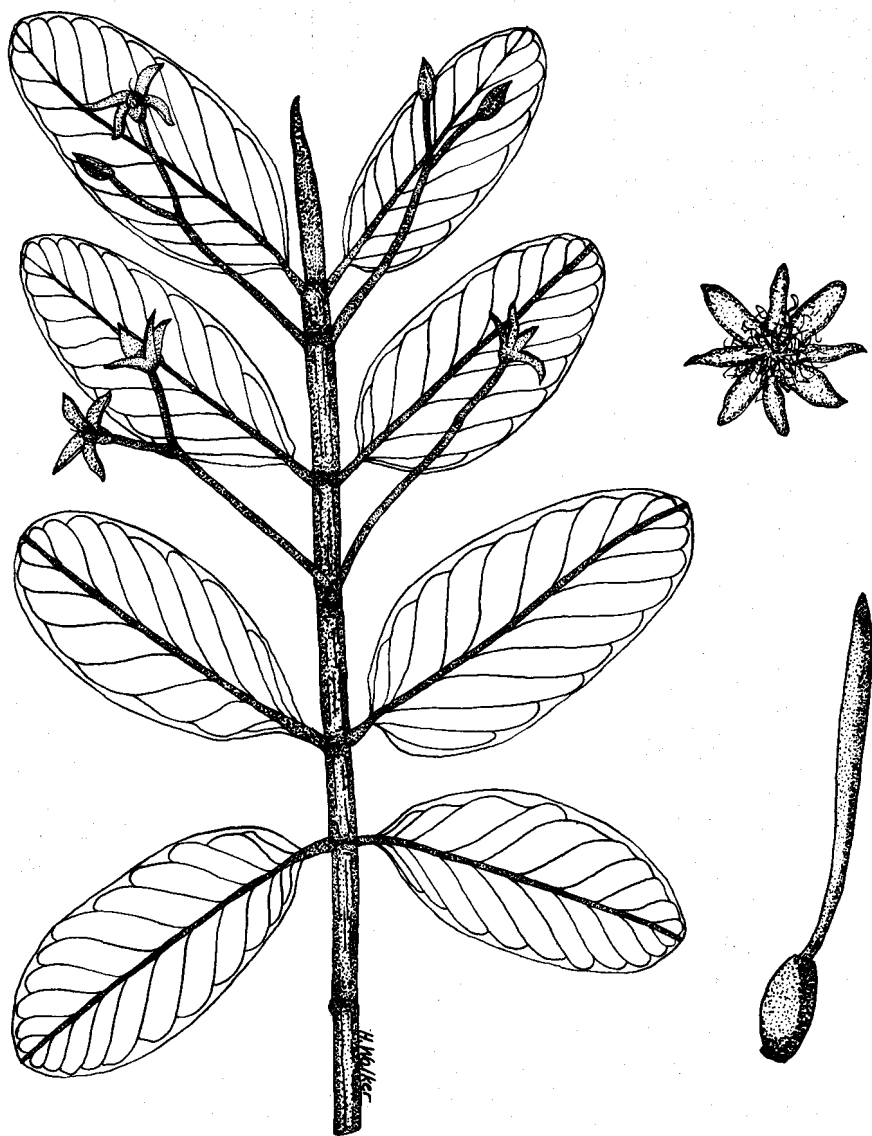
#### History:

Native from southern Florida to South America. Introduced to Hawaii by the American Sugar Company in 1902 to help secure the coastal land of southeastern Molokai.

#### Note:

Sometimes spreads into fish ponds and becomes difficult to remove.

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## MYRTACEAE (MYRTLE FAMILY)

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*Rhodomyrtus tomentosa* (Ait.) Hassk.

Synonym: *Myrtus tomentosa* Ait.

---

### DOWNY ROSE MYRTLE, ISENBERG BUSH, RHODOMYRTUS

---

#### Description:

A large shrub to small twiggy tree, up to 10 feet high; older branches yellowish, fissured with loose bark. **Leaves** 2 to 3 inches long, 3-veined from the base, oval, obtuse to sharp pointed at the tip, densely gray or rarely yellowish-hairy beneath, hairy above when young, hairless when mature, stiff, margin entire, with wide leafstalk. **Flowers** 3/4 to 1 inch wide, solitary or two to three; petals tinged white outside with purplish-pink or all pink. **Fruit** purple, round, 3-celled, capped with persistent calyx lobes, about 1/2 inch wide, soft with double row of seeds in each cell, edible. **Seeds** triangular (5).

#### Propagation:

By seed.

#### Habitat:

Thrives where there is 50 inches or more rainfall. A weed in pastures, rangelands, and waste places.

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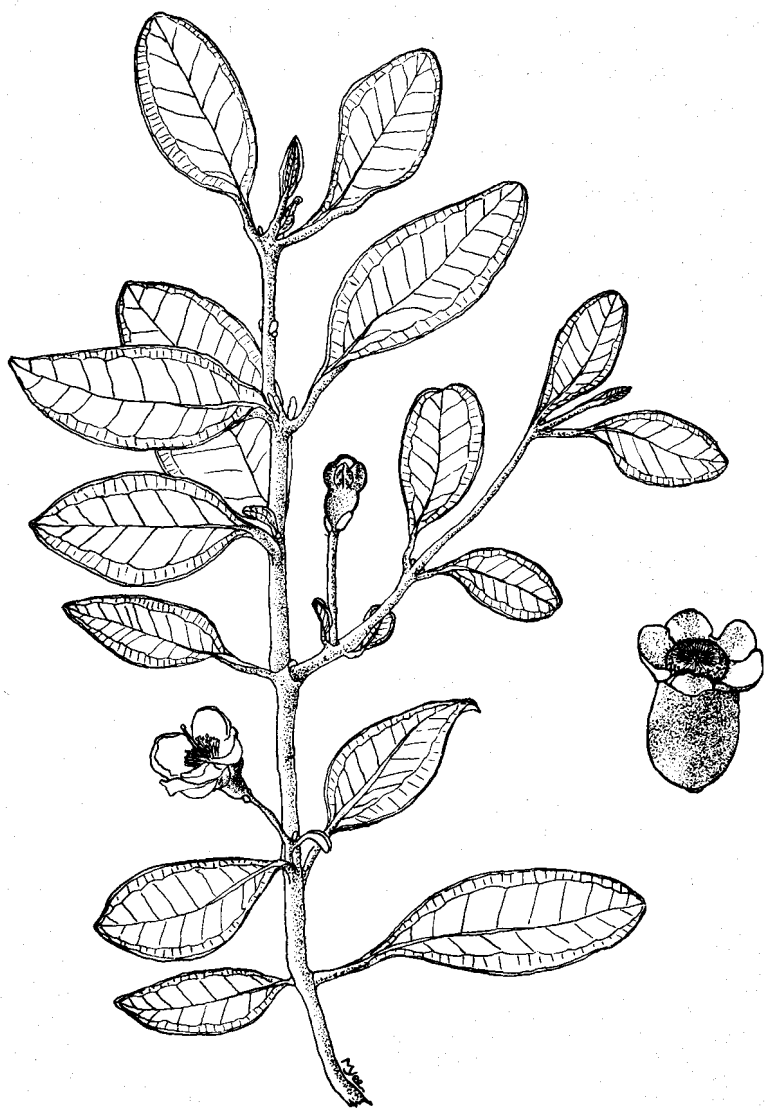
#### History:

Native to Southeast Asia, Malaysia, and the Philippines. Introduced to Kauai prior to 1920.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. A prolific seeder which spreads rapidly to form impenetrable thickets.

---



## MELASTOMATACEAE (MELASTOMA FAMILY)

---

*Clidemia hirta* (L.) D. Don

Synonym: *Melastoma hirta* L.

---

### CLIDEMIA, KOSTERS CURSE

---

#### Description:

A branching shrub, 3 to 6 feet high, densely hairy throughout.

**Leaves** papery, hairy on both sides, 4 inches long, broad-ovate, more or less indented at the base, with five to seven veins spreading from the base. **Flowers** white, 1/2 inch across, clustered in the upper leaf axils, 5- to 6-parted.

**Fruit** a fleshy berry, small, black, hairy, edible (15, 16).

#### Propagation:

By seed.

#### Habitat:

Adapted to moist conditions. Found in the forest reserve above Wahiawa, Oahu. A potential weed in waste places, pastures, and rangelands.

---

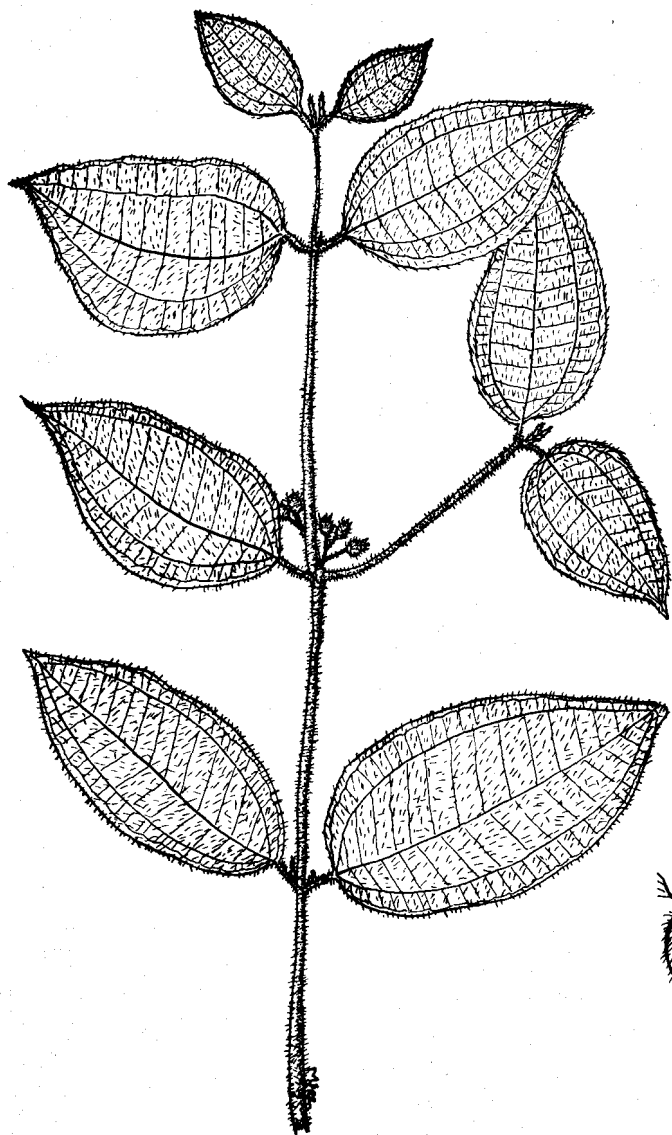
#### History:

Native to tropical America. First noted on Oahu in 1952.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Of no forage value. Grows fast and quickly takes over an area.

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## MELASTOMATACEAE (MELASTOMA FAMILY)

---

*Melastoma malabathricum* L.

---

### MELASTOMA

---

#### Description:

A spreading shrub, about 6 feet high. **Leaves** narrow, oval, pointed, 2 to 6 inches long, with three to five veins from the base, both surfaces covered with stiff, flat-lying hairs; leafstalk 1/2 inch long or less. Branchlets, leaf and flower stalks, and calyx covered with narrow, pointed, commonly toothed, light-colored scales. **Flowers** pink to purple, 1 to 3 inches across, 5- to 7-parted, clustered on short stalks at branch tips; stamens large, unequal, twice as many as the petals. **Fruit** berrylike, 1/4 inch or more in diameter, covered with scaly, bristly-tipped calyx. **Seeds** numerous, small, semicircular, each coated with a little, red, sweet, astringent, edible pulp (15).

#### Propagation:

By seed. Dispersed by water and birds.

#### Habitat:

Found where there is 50 inches or more rainfall. Thrives in the open on the Island of Hawaii and is a serious pest on Kauai. A weed in pastures, rangelands, and waste places.

---

#### History:

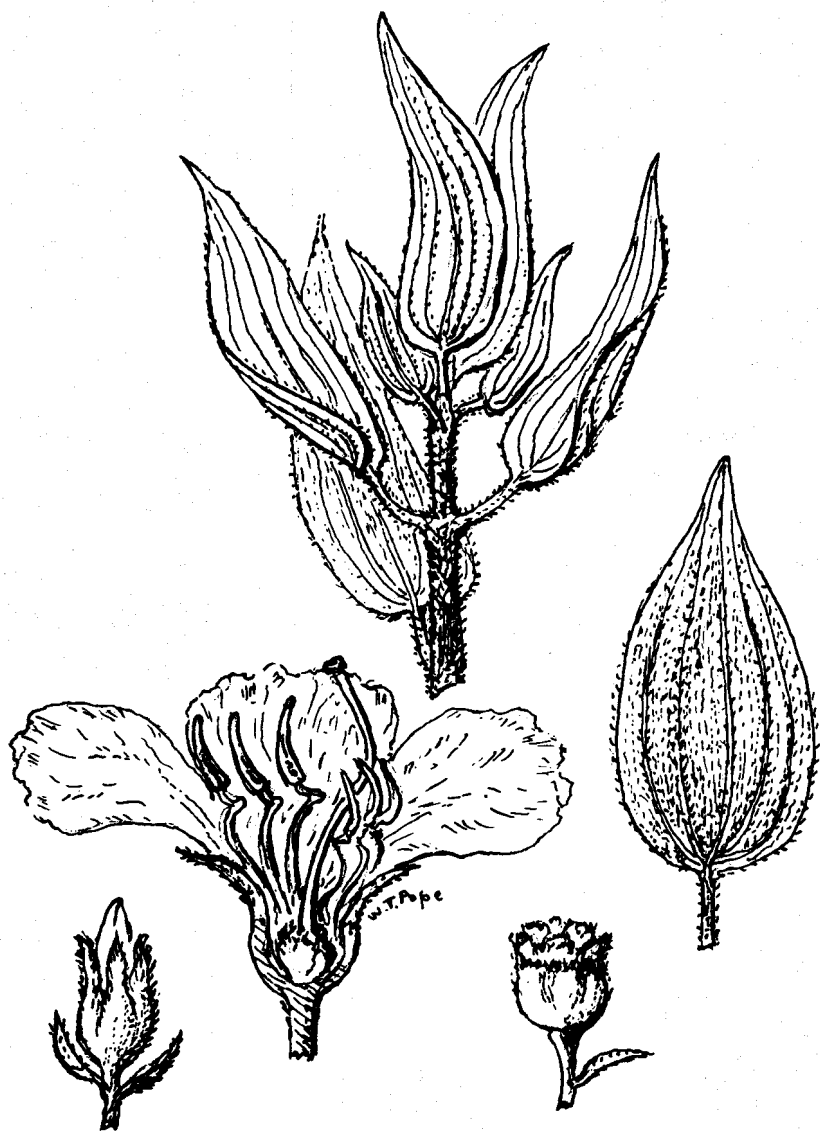
Native to India. Introduced as an ornamental to Kauai from Florida in 1916.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Of no forage value. Forms dense thickets, crowding out desirable forage.

---





## ONAGRACEAE (EVENING PRIMROSE FAMILY)

---

*Ludwigia octovalvis* (Jacq.) Raven

Synonyms: *Jussieua octovalvis* (Jacq.) Sw.; *J. ligustraefolia* HBK.; *J. suffruticosa* L.; *J. villosa* sensu Hbd., non Lam.; *J. erecta* sensu Deg., non L.; *Oenothera octovalvis* Jacq.

---

### PRIMROSE WILLOW, KAMOLE

---

#### Description:

A perennial herb, woody at the base, 2 to 4 feet high. **Leaves** alternate, short-stemmed, narrow, to 3 inches long, conspicuously feather-veined, slightly hairy above, margins wavy or entire.

**Flowers** yellow, solitary at leaf axils, on stems about 1/2 inch long, with two small bracts near the top; calyx tube narrow, about 3/4 inch long, smooth, 8-angled, tipped, and with four, pointed, persistent lobes; petals 4, spreading, about 1/2 inch long; stamens 8, short. **Fruit** a capsule, cylindrical, many-seeded (15).

#### Propagation:

By seed.

#### Habitat:

Found in wet regions. A weed in waste places, pastures, and rangelands.

---

#### History:

Widely distributed in tropical regions.

---



## UMBELLIFERAE (PARSLEY FAMILY)

---

*Centella asiatica* (L.) Urban

Synonym: *Hydrocotyle asiatica* L.

---

### ASIATIC PENNYWORT

---

#### Description:

A creeping plant, rooting at the nodes. **Leaves** round to heart-shaped, 3/4 to 2 inches in diameter; leafstalk long, young stalk covered with woolly hairs; blades green above, light below, margins scalloped. **Flowers** white, small, inconspicuous, three or four together in a short-stemmed umbel at leaf bases close to the ground. **Fruit** round to oval, about 1/8 inch in diameter, flat, hairy, 2-parted with 1 seed in each half (15, 22).

#### Propagation:

By seed and by runners which radiate from the central stem.

#### Habitat:

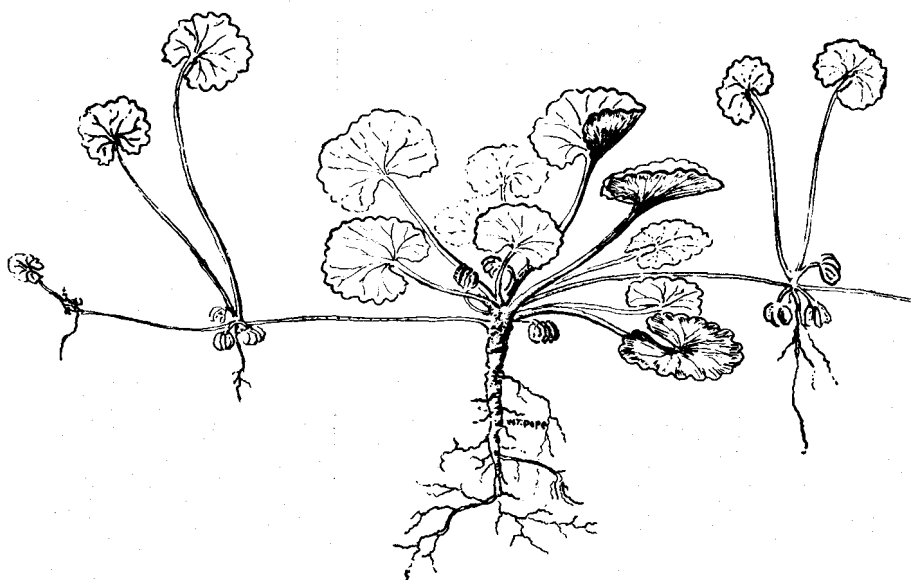
Found in wet regions from sea level to 1,000 feet or more.  
A weed in lawns and gardens.

---

#### History:

Probably native to tropical Asia.

---



## UMBELLIFERAE (PARSLEY FAMILY)

---

*Foeniculum vulgare* Mill.

Synonym: *Anethum foeniculum* L.

---

### COMMON FENNEL, SWEET FENNEL

---

#### Description:

A perennial branching herb, 2 to 7 feet high; all parts aromatic.

**Leaves** alternate, divided more than once, finely dissected into numerous threadlike segments, leafstalks broad and clasping. **Flowers** yellow, in large compound umbels; no calyx; corolla teeth not apparent. **Fruit** with 2 seeds, 1/6 inch long, ribbed with many oil glands (20).

#### Propagation:

By seed.

#### Habitat:

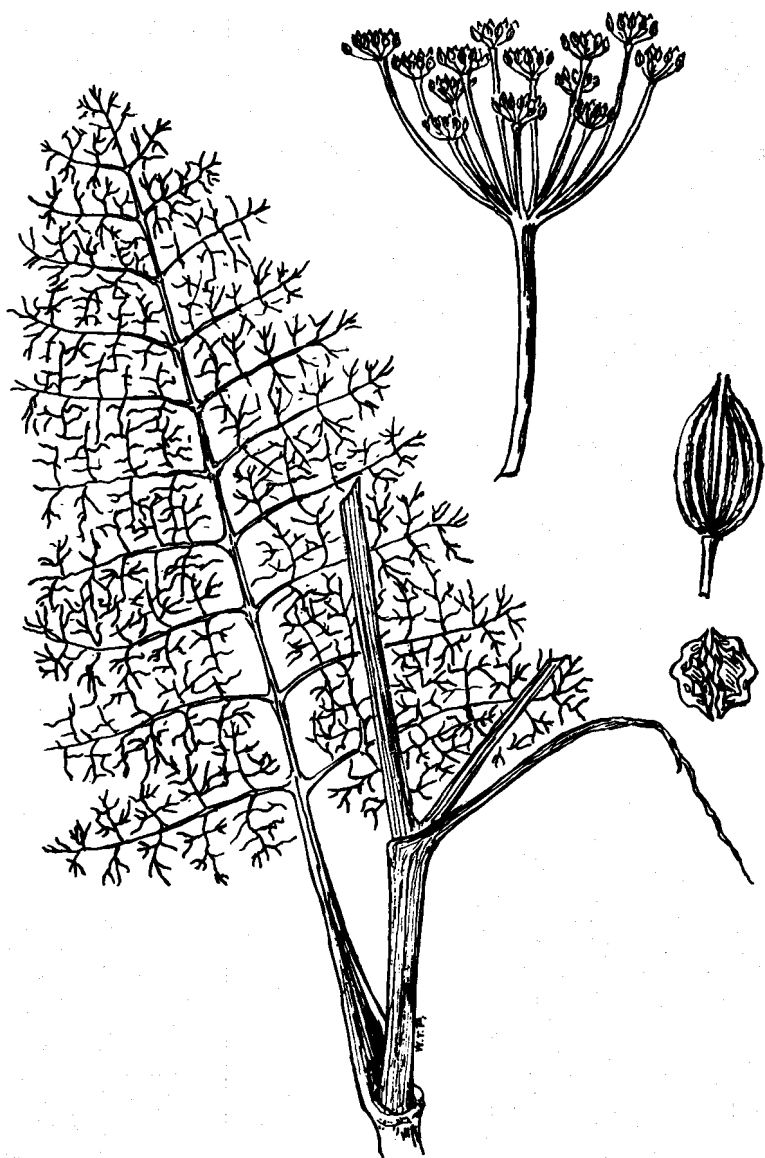
Found in dry to arid regions. A weed in pastures, rangelands, and along roadsides.

---

#### History:

Native to southern Europe and western Asia. Introduced to Hawaii before 1871.

---



## EPACRIDACEAE (EPACRIS FAMILY)

---

*Styphelia Tameiameiae* (Cham.) F. Muell.

Synonyms: *Cyathodes Tameiameiae* Cham., *C. Macraeana* DC.

---

### PUKIAWE

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#### Description:

A shrub, 3 to 6 feet high, rarely to 15 feet high. **Leaves** alternate, numerous, covering outermost branches, stiff, leathery, very short-stemmed, oblong, to 1/2 by 1/6 inch, tip blunt or pointed, base blunt or wedge-shaped, smooth, whitish below, with 9 to 13 longitudinal, forking veins.

**Flowers** white, inconspicuous, developing at leaf axils; bracts 5 to 9, small; calyx 5-parted; corolla tube tiny, with 5 small lobes; stamens 5, opening lengthwise; ovary 5- to 8-celled. **Fruit** a drupe, nearly spherical, red or white, rather dry, about 1/4 inch in diameter. **Seeds** ovoid (15).

#### Propagation:

By seed.

#### Habitat:

A weed at higher elevations in pastures and rangelands.

---

#### History:

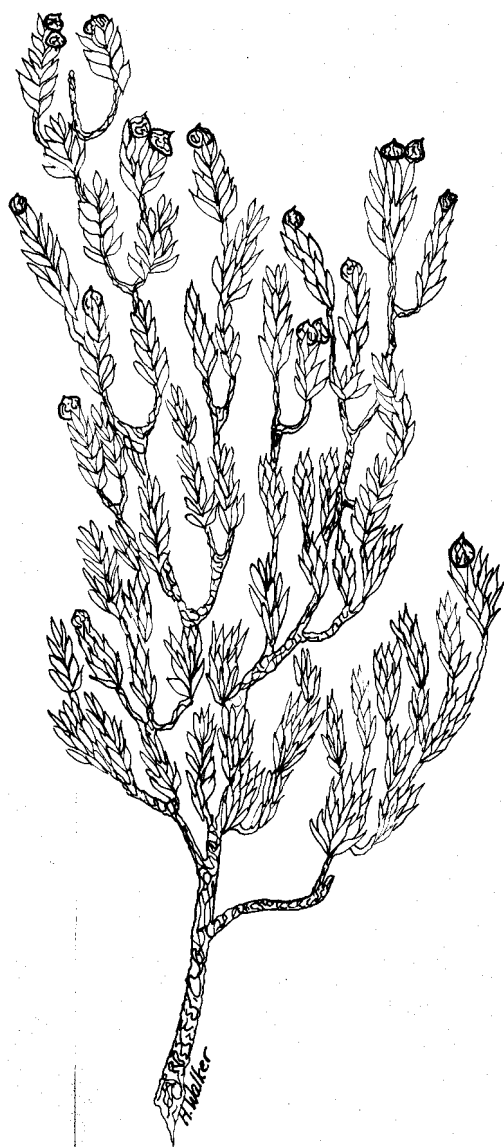
Native to Hawaii.

#### Note:

Of no forage value.

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## PRIMULACEAE (PRIMROSE FAMILY)

---

*Anagallis arvensis* L.

---

### POISONOUS PIMPERNEL, SCARLET PIMPERNEL

---

**Description:**

A small, loosely spreading annual herb. **Stems** 4 to 12 inches long, usually 4-angled. **Leaves** opposite, ovate to oval, sessile or somewhat clasping the stem and usually with small black dots on the under surface. **Flowers** salmon or bright red, but occasionally white, small, opening only in bright weather; sepals 5; petals 5; stamens 5; pistil 1. **Fruit** a capsule, on maturing splits open around the middle. **Seeds** many, small, triangular, pitted (20).

**Propagation:**

By seed.

**Habitat:**

A weed in pastures, rangelands, and cultivated areas.

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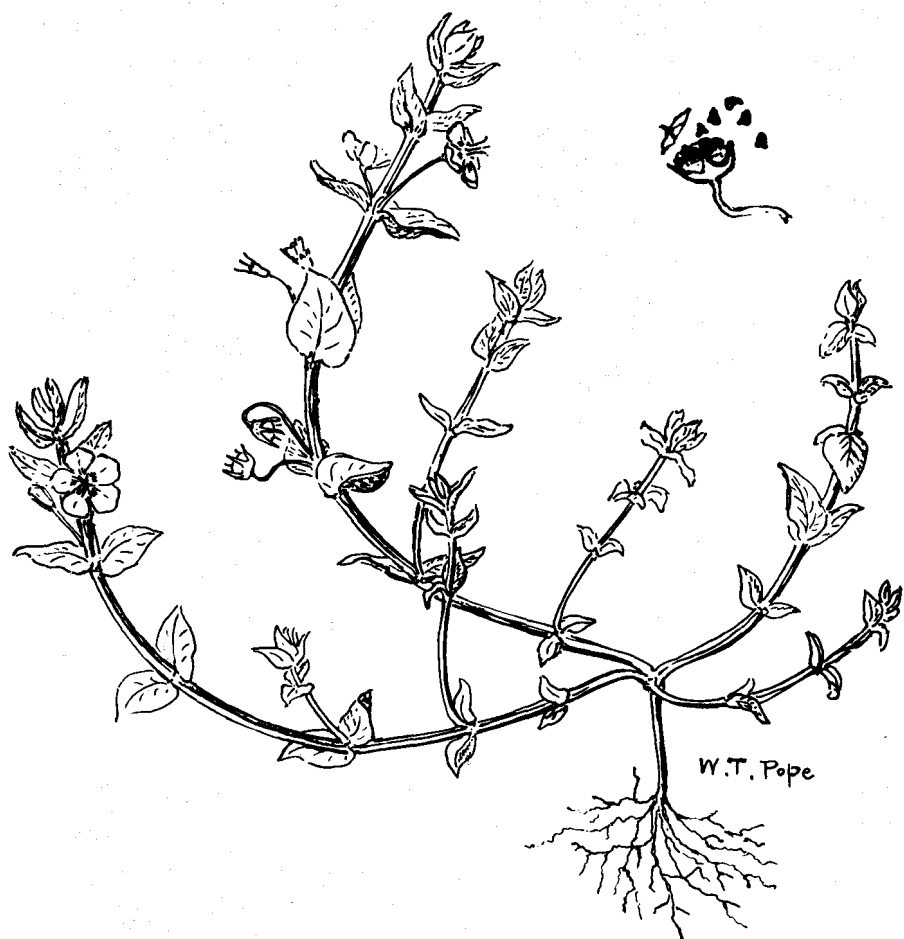
**History:**

Native to Europe. First reported in Hawaii in 1895.

**Note:**

Poisonous to man and beast.

---



## ASCLEPIADACEAE (MILKWEED FAMILY)

---

*Asclepias curassavica* L.

---

### BUTTERFLYWEED, BLOOD FLOWER

---

#### Description:

An erect perennial, 2 to 3 feet high. **Leaves** opposite, lanceolate, 3 to 4 inches long, with short leafstalks. **Flowers** bright red or orange, many, borne in umbels on 2-inch terminal and axillary flower stalks; floral parts in whorls of 5; petals 5; stamens 5, hood-shaped, orange, each with inwardly curved horns. **Fruit** a mature simple pistil, 3 inches long, splits lengthwise at full maturity. **Seeds** many, flat, each with a ring of silky hairs at the top (20).

#### Propagation:

By seed.

#### Habitat:

Common in dry, sunny areas at lower elevations. A weed in wastelands and along roadsides.

---

#### History:

Native to Mexico and the West Indies. Introduced to Hawaii about 1845-1850.

#### Notes:

Declared **noxious** in Regulation 2. Generally considered poisonous and avoided by livestock. Also grown as an ornamental and is a host of the monarch butterfly.

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## ASCLEPIADACEAE (MILKWEED FAMILY)

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*Gomphocarpus physocarpus* E. Meyer

---

### BALLOON PLANT, GOMPHOCARPUS

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#### Description:

A semi-woody plant, 2 to 5 feet high. **Main stem** divided into several slender branches. **Leaves** opposite, linear-lanceolate. **Flowers** white, in terminal clusters, arranged in umbels; sepals 5; petals 5; stamens 5, erect, hooded but without the inward curved horns common to most species and genera of the milkweed family. **Fruit** a capsule, pale green, 2 to 4 inches long, bladdery with outer covering containing rows of fleshy hairs 1/4 to 1/2 inch long (20).

#### Propagation:

By seed. A single pod contains about 200 seeds which, when ripe, are scattered by the wind.

#### Habitat:

Found in dry and in wet regions. Conspicuous in cultivated areas.

---

#### History:

Native to South Africa. First collected on Oahu in 1919.

#### Note:

Also grown as an ornamental.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Convolvulus arvensis* L.

---

### FIELD BINDWEED

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#### Description:

A creeping plant with slender stems, 1 to 5 feet long, smooth or slightly covered with minute hairs. **Leaves** alternate,  $\frac{3}{4}$  to 2 inches long,  $\frac{1}{2}$  to 1 inch wide, ovate, with two basal lobes, or arrow-shaped, the tip pointed or blunt, margin entire, leaf surface of both sides smooth or clothed with minute hairs; leafstalk  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long, smooth or hairy. **Flowers** pink or white, with five purplish bands running from base to margin on the outside, funnel-shaped, 1 to 1- $\frac{1}{4}$  inches across,  $\frac{3}{4}$  to 1 inch long, delicate; flower stalk 1- to 4-flowered, slender, about the same length as the leaves, provided with small leaves at some distance below the flower; sepals  $\frac{1}{8}$  inch long, oblong, blunt. **Fruit** a pod, round, hard, 2-chambered, with 3 to 4 seeds. **Seeds**  $\frac{1}{8}$  inch long, pear-shaped, dark brown, one face convex, the other bluntly angled with flat sides, the surface roughened with small tubercles, the basal scar rough, with reddish depression at the lower pointed end (22).

#### Propagation:

By seed and by a deep underground system of extensively creeping stems and roots. The fleshy roots send up branching and twining stems which form new, thickly matted infestations on the surface. Dispersed by water and equipment.

#### Habitat:

Found in dry and in moderately moist regions. A serious pest in cultivated areas.

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#### History:

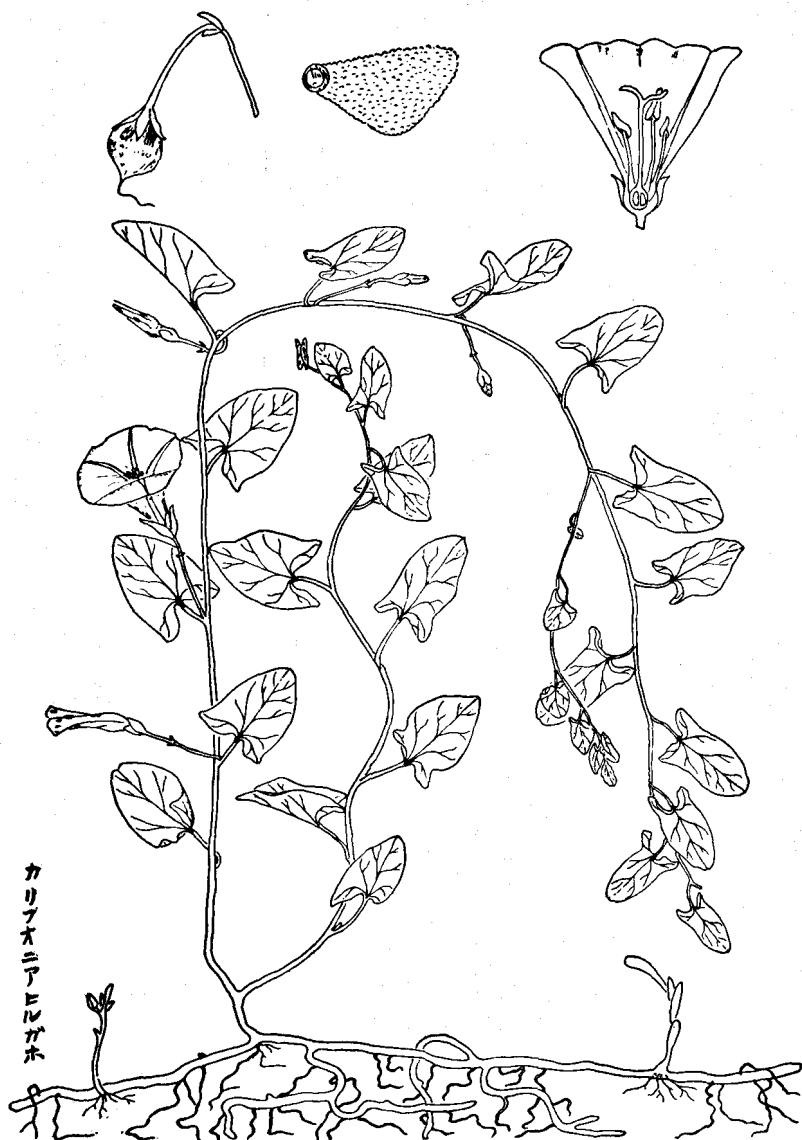
Native to Europe. Accidentally introduced to Hawaii; first observed about 1927.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. It twists around crops and smothers them.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Cuscuta sandwichiana* Choisy

---

### DODDER

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#### Description:

A slender twining parasite. **Stems** threadlike, leafless, usually yellowish or orange but sometimes tinged with red. **Leaves** reduced to minute scales. **Flowers** white, yellow, or orange, tiny, occur in massed clusters; calyx 5-lobed, cupped; corolla 5-lobed, 1/6 inch across, cut halfway down; stamens 5; styles 2, extended. **Fruit** a capsule, nearly spherical, 1/6 inch in diameter, indehiscent, 2-celled. **Seeds** 4, each 1/12 inch in diameter, brownish in color (20).

#### Propagation:

By seed and creeping stems.

#### Habitat:

Found in arid and moist regions at lower to middle elevations.

---

#### History:

Endemic to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. It attaches itself to other plants by suckers.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Ipomoea alba* L.

Synonyms: *I. bona-nox* L., *Calonyction aculeatum* (L.) House

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### MOONFLOWER, WHITE-FLOWERED MORNING-GLORY

---

#### Description:

A twining perennial, often of considerable size. **Older stems** become warty with projections which may become roots if placed in damp soil conditions. **Leaves** usually heart-shaped, 3 to 6 inches long and about the same width; leafstalks 4 to 6 inches long. **Flowers** white, axillary, on stalks 3 to 7 inches long, each supporting several buds which open one at a time; calyx with unequal sepals -- interior two short, exterior three longer and more pointed; corolla 3 or 4 inches across, opening at right angles to the cylindrical tube which is 3 or 4 inches long; stamens and pistils extend slightly beyond the corolla tube; stigma 2-lobed; ovary 2-celled, oblong, with a prominent tip. **Seeds** without hairs, light brown at maturity (20).

#### Propagation:

By seed and cuttings.

#### Habitat:

Found in moist low ground and mountain woodlands. A weed in wastelands.

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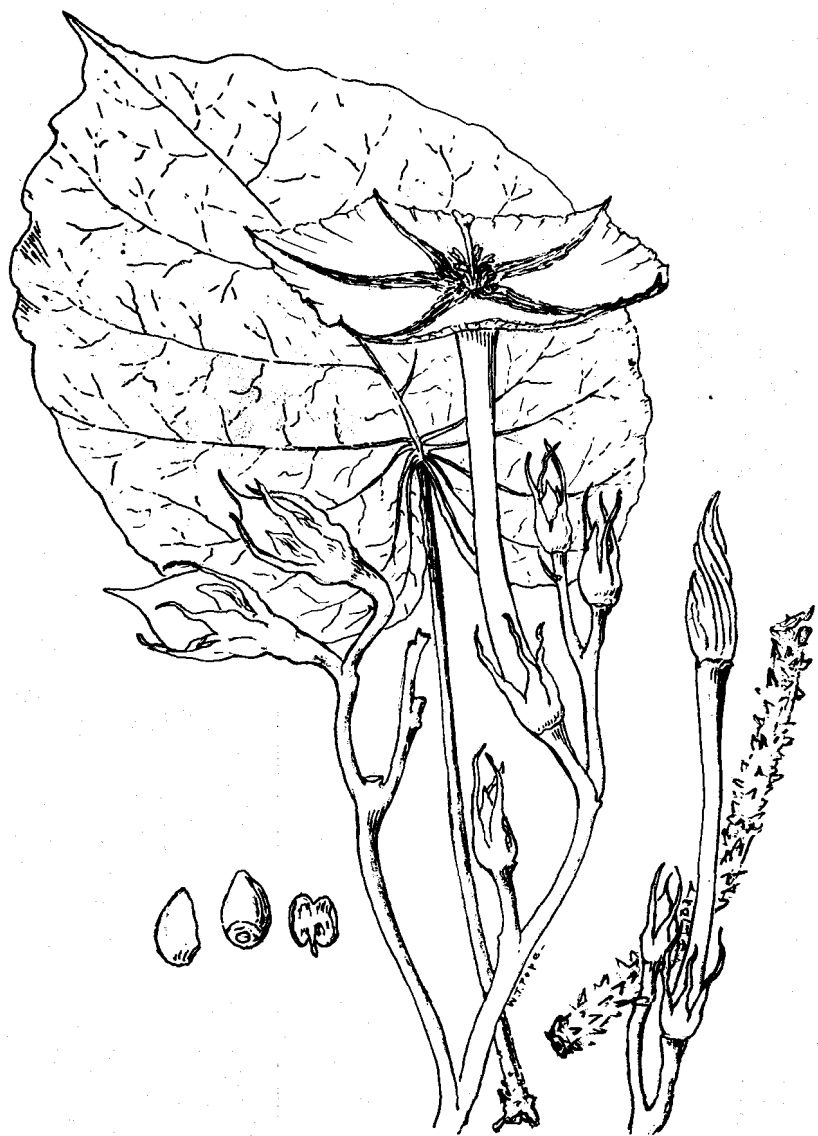
#### History:

Native to tropical America.

#### Notes:

Climbs over shrubbery and trees. Grown as a night-blooming ornamental; flowers open in late afternoon and wither the next morning.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Ipomoea aquatica* Forsk.

Synonym: *I. reptans* Poir., non *Convolvulus reptans* L.

---

### CREEPING SWAMP MORNING-GLORY

---

#### Description:

**Stems** creeping, sometimes twining, rooting at nodes, said to become hollow and slightly inflated when growing upon still water; older stems hairy; foliage dense, dark green. **Leaves** heart-shaped with a prominent pointed tip, variable in size, usually about 1-1/2 inches broad; leafstalks variable, about 3 inches long. **Flowers** white to cream, solitary, axillary, on stalks about 3 inches long, slim, node near middle supporting two little bracts; calyx small, with five pointed lobes about 1/8 inch long; corolla funnel-shaped, 5/8 inch long, with inside of tube slightly purplish. **Fruit** a capsule, spherical, with little point, clasped with sepals; ovary 2-celled; stigma 2-lobed. **Seeds** small, smooth, light brown (20).

#### Propagation:

By seed and cuttings.

#### Habitat:

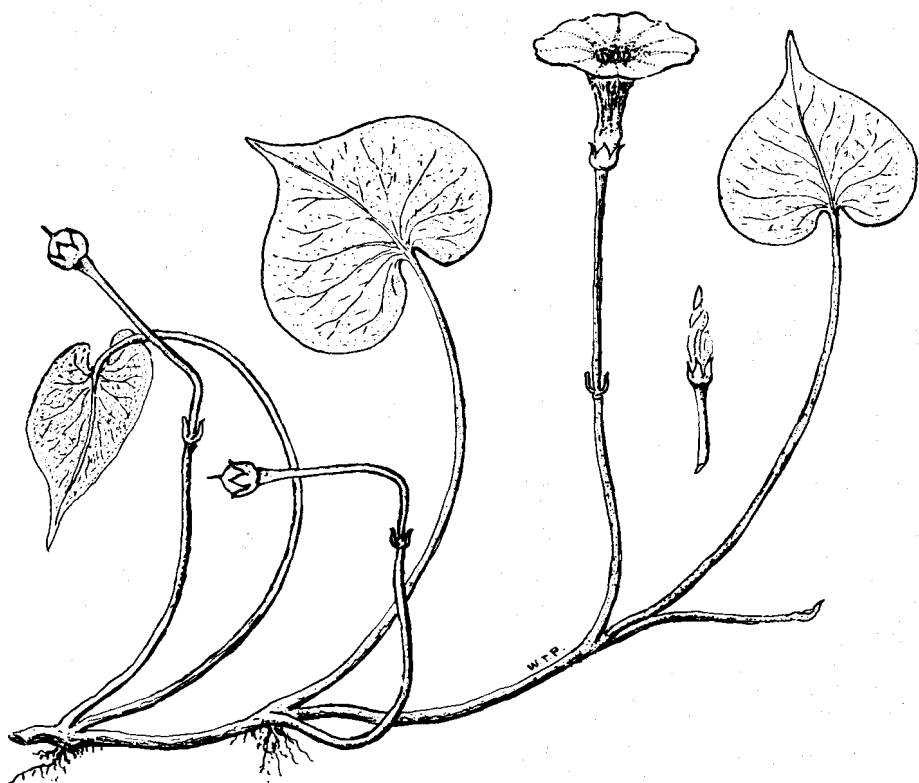
Common in waste and swampy places of lowlands, especially in old taro patches. Cultivated as a vegetable.

---

#### History:

Grows throughout tropical Africa and from Asia to Australia.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Ipomoea brasiliensis* (L.) Sweet

Synonyms: *Convolvulus brasiliensis* L.; *I. pes-caprae* (L.) R. Br.; *I. pes-caprae* sensu Haw. bot., non (L.) R. Br.

---

### BEACH MORNING-GLORY, POHUEHUE

---

#### Description:

A smooth-stemmed perennial. **Stems** long, prostrate, running, containing tough fibers and milky juice. **Leaves** thick and leathery, on leafstalks 2 or 3 inches long; blades 2 or 3 inches in diameter, ovate to almost circular, with small sharp points in the notch at the tip. **Flowers** pink, bell-shaped; sepals short, broadly ovate; corolla about 2 inches across, tapering gradually to the base.

**Fruit** a capsule, 2-celled. **Seeds** brown, covered with hairs (20).

#### Propagation:

By seed and by runners which are several yards long and often root at the nodes.

#### Habitat:

Common on sandy beaches just above the high-tide line.

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#### History:

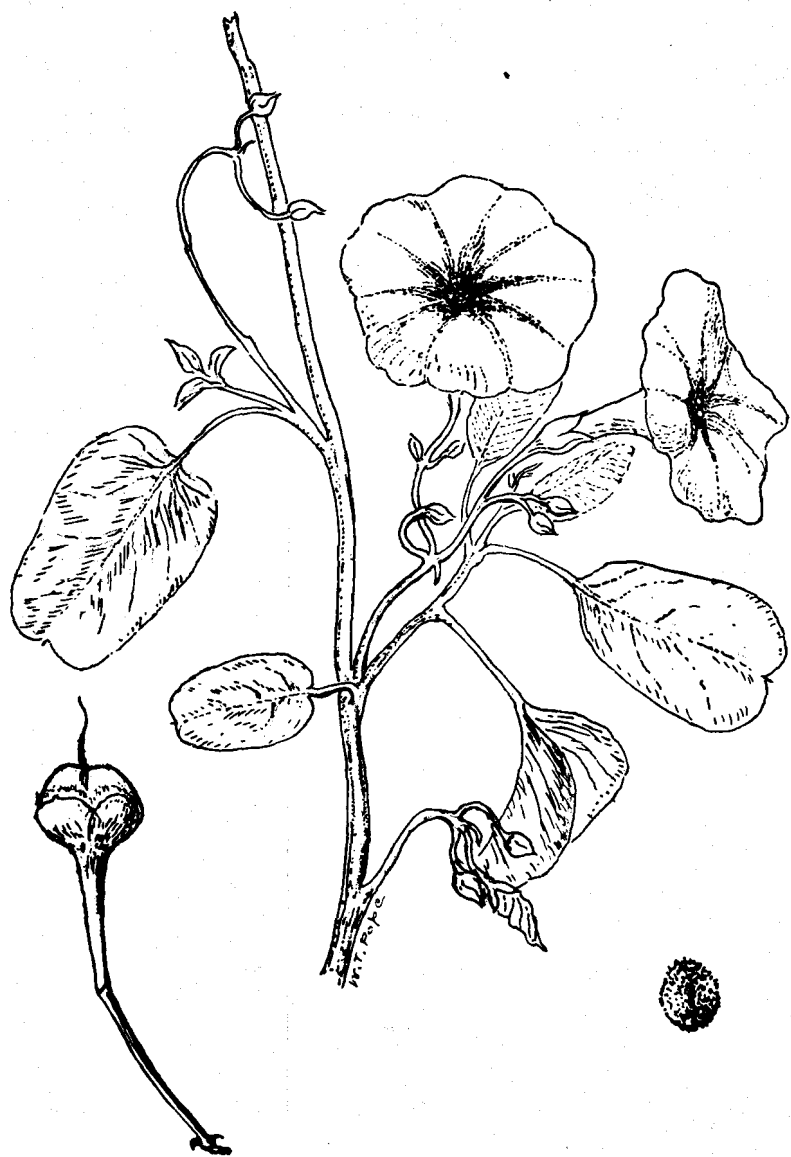
Found on tropical shores from India and Ceylon to the U.S. Mainland and the West Indies. Native to Hawaii.

#### Note:

Stems and roots eaten in large amounts may be poisonous to man and livestock.

---





## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Ipomoea cairica* (L.) Sweet

Synonyms: *I. palmata* Forsk.; *I. tuberculata* R. & S.; *Convolvulus cairicus* L.

---

### FIVE-FINGERED MORNING-GLORY, KOALI-AI

---

#### Description:

A stout, hairless twiner with tuberous roots. **Leaves** palmately divided to the base into five, thin, lanceolate or ovate-lanceolate lobes -- the two lower ones generally cut twice.

**Flowers** light pink or purplish, three, five, and seven arranged on a common stalk; ovary 2-celled. **Fruit** a capsule, smooth.

**Seeds** nearly spherical, 1/4 inch in diameter, smooth or silky with fine hair (20).

#### Propagation:

By seed.

#### Habitat:

Common in rocky areas, in abandoned gardens, on fences or shrubs, and along roadsides at lower altitudes. A weed in cultivated areas.

---

#### History:

Native to tropical Africa.

#### Note:

The vines may twine as far as 40 feet.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Ipomoea congesta* R. Br.

Synonyms: *I. indica* (Burm.) Merr., *I. insularis* Steud.

---

### BLUE MORNING-GLORY, KOALI-AWAHIA

---

#### Description:

A stout perennial twiner with woody base and large roots; young branches and leaves covered with soft hair. **Leaves** heart-shaped, 3 to 4-1/2 inches long, entire. **Flowers** several on each stalk; bracts linear-lanceolate; corolla tubular to bell-shaped, 2 to 3 inches long and about the same width, delicate azure blue in the early morning and later changing to purplish and pink before closing in the evening; stamens one-half as long as the corolla tube; style as long as the stamens; stigma nearly spherical.

**Fruit** a capsule, nearly spherical, 5/8 inch in diameter. **Seeds** usually 2, fuzzy, dark brown (20).

#### Propagation:

By seed.

#### Habitat:

Common almost everywhere from sea level to 2,000 feet. A weed which twines over shrubbery and grass along roadsides and in wastelands.

---

#### History:

Distributed from Australia to Polynesia.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Ipomoea obscura* (L.) Ker-Gawl

Synonym: *Convolvulus obscurus* L.

---

### MORNING-GLORY

---

#### Description:

A twining plant. **Leaves** ovate to heart-shaped, sharp pointed, entire, nearly smooth, 1 to 4 inches long. **Flowers** bell-shaped, about 1 inch long, on long stalks; sepals ovate; corolla yellow or cream with yellow bands, and with a purple base. **Seeds** velvety (11, 15).

#### Propagation:

By seed.

#### Habitat:

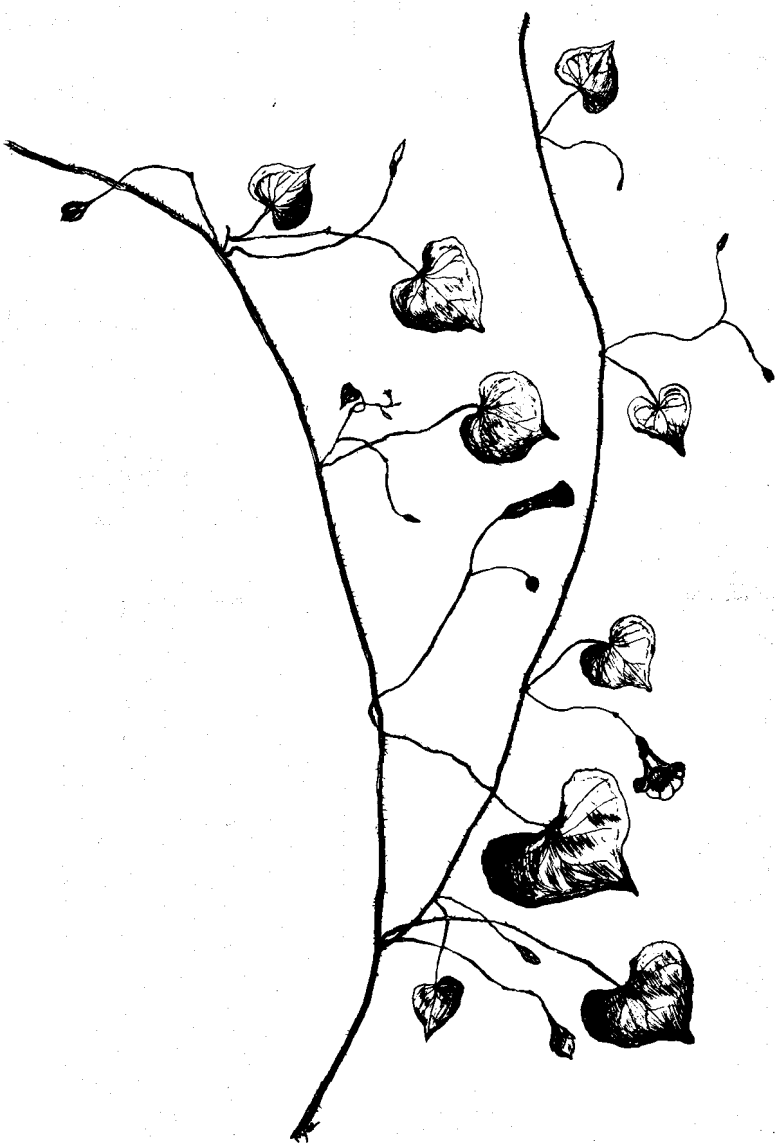
A weed in wastelands.

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#### History:

Native to southern Asia and Mascarene Islands.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Ipomoea triloba* L.

---

### LITTLE BELL, AIEA MORNING-GLORY

---

#### Description:

A plant covered with soft short hairs, or hairless. **Stems** herbaceous, slender, 20 to 40 inches long. **Leaves** commonly 3- to 5-lobed, entire, ovular, 1 to 4 inches long, sharp pointed to somewhat concave and tapering at the tip, base heart-shaped. **Flowers** red or purple, up to 1 inch across, one to a few on a stem. **Fruit** a capsule, nearly spherical, hairy, 1/4 inch. **Seeds** hairless (14).

#### Propagation:

By seed.

#### Habitat:

Common at low to middle elevations.

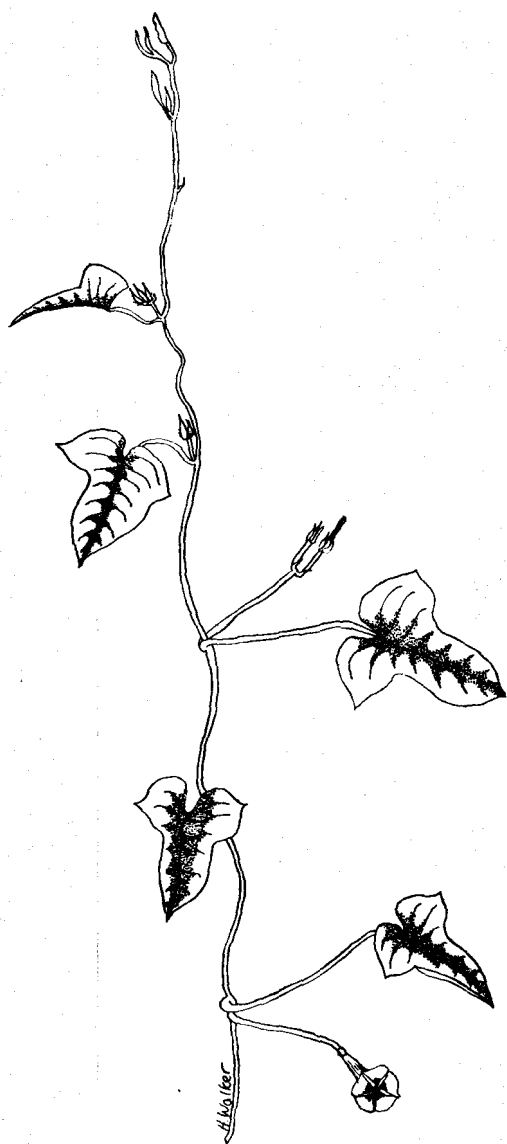
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#### History:

Native to tropical America.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Ipomoea tuboides* Degener & van Ooststr.

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### HAWAIIAN MOONFLOWER

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#### Description:

**Stem** slender, cylindrical, green or often brownish red with small green elongated spots, generally hairless except on very young parts, non-prickly, ridged and woody when dry. **Leaves** commonly roundish, up to 6 inches in diameter, very thin, not shiny, flat, hairless, pointed at the tip, deeply heart-shaped at the base, margin smooth or with a few coarse teeth, with light green petioles up to 3 inches long. **Flowers** white, nocturnal, often single on a slender stem, flat tray-shaped, on wilting becoming purplish-pink; tube about 2-1/2 to 3 inches long, white with greenish tinge; petals about 3 inches wide, hairless. **Fruit** a capsule, oval, about 1/2 to 3/4 inch high, with pointed tip, with four oval to oblong valves, 2-celled, 4-seeded. **Seeds** with two plane sides and one convex side, very dark brown, hairy, 5/16 to 7/16 inch long (5).

#### Propagation:

By seed.

#### Habitat:

Found in arid rocky regions at lower elevations on all the Islands.

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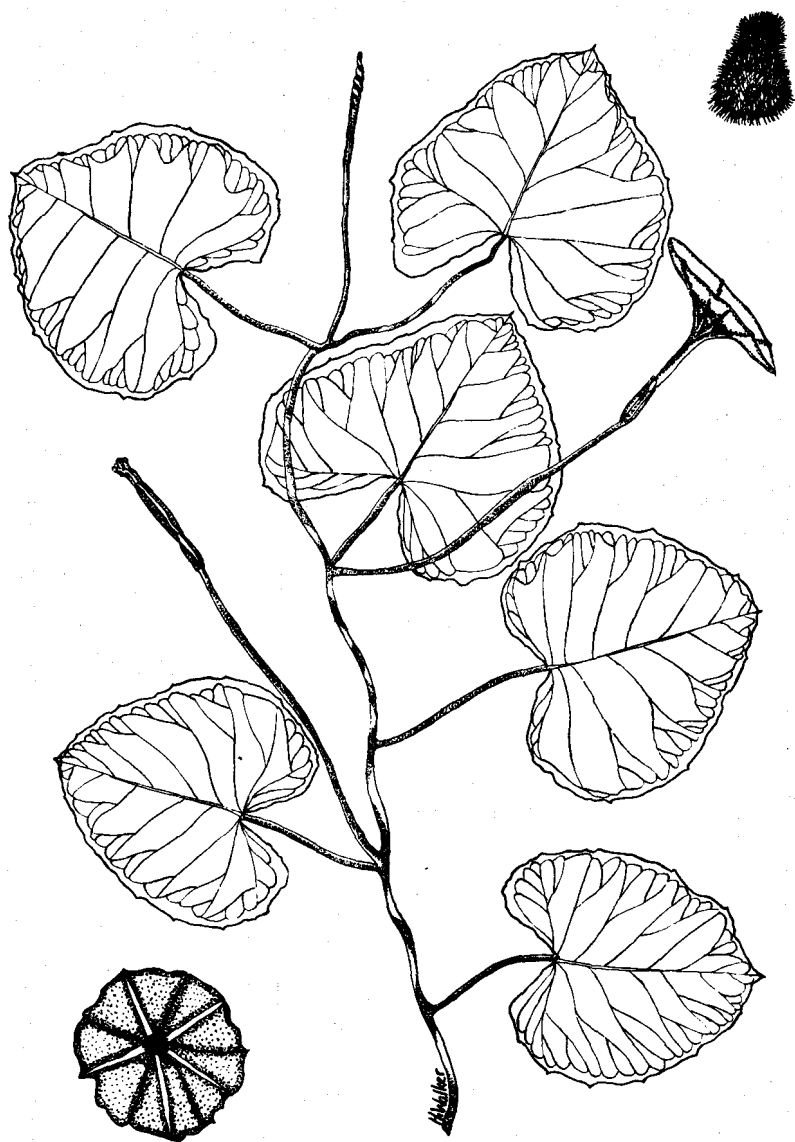
#### History:

Endemic to Hawaii.

#### Note:

A variety and several forms exist in more restricted areas.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

---

*Jacquemontia sandwicensis* Gray

---

### PAU-O-HIIAKA

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#### Description:

A prostrate, herbaceous perennial, spreading to several feet across; branches 1 to 4 feet long, slightly woody at the base, usually smooth, but one variety covered with hairs throughout. **Leaves** on short stalks, rather thick, ovate or broadly wedge-shaped, 1-1/2 inches long, notched at the tip, otherwise entire. **Flowers** blue or pale blue, axillary, one to two on a stalk about 1 inch long; bractlets small; sepals 1/4 inch long, broadly ovate; corolla shallow, bell-shaped, 3/4 to 1 inch across; stamens 5, shorter than the 2-lobed stigma. **Fruit** a capsule, nearly spherical, 2-celled. **Seeds** dark brown, mostly smooth, four in number (20).

#### Propagation:

By seed.

#### Habitat:

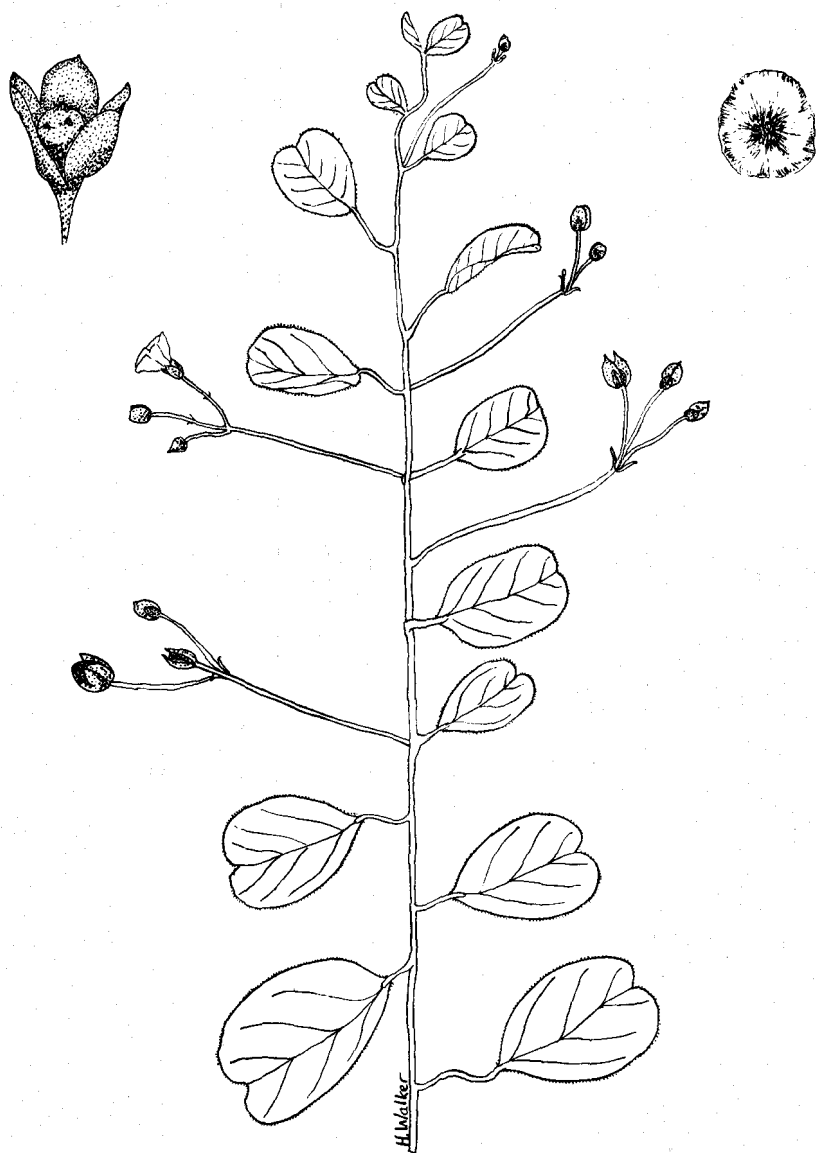
Found on dry plains and rocky slopes at lower elevations (particularly near the sea) on the leeward side of the Islands. A weed in pastures, rangelands, and waste areas.

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#### History:

Endemic to Hawaii.

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## CONVOLVULACEAE (MORNING-GLORY FAMILY)

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*Merremia aegyptia* (L.) Urban

Synonyms: *Ipomoea pentaphylla* (L.) Jacq. non Cav.; *I. aegyptia* L.;

*Operculina aegyptia* (L.) House

---

### HAIRY MERREMIA, HAIRY MORNING-GLORY

---

#### Description:

An herbaceous twining annual; almost all parts covered with stiff spreading hairs about 3/16 inch long. **Leaves** palmately cut to the base into five segments which are obovate or oval with rounded ends. **Flowers** white, on stalks bearing from 3 to 7 buds which open one at a time; sepals ovate, 1/2 inch long, the three exterior ones the longest; corolla 1 inch in diameter, funnel-shaped; stamens and pistil extend beyond the corolla; stigma 2-lobed; ovary spherical, 4-lobed. **Seeds** smooth, light brown (20).

#### Propagation:

By seed.

#### Habitat:

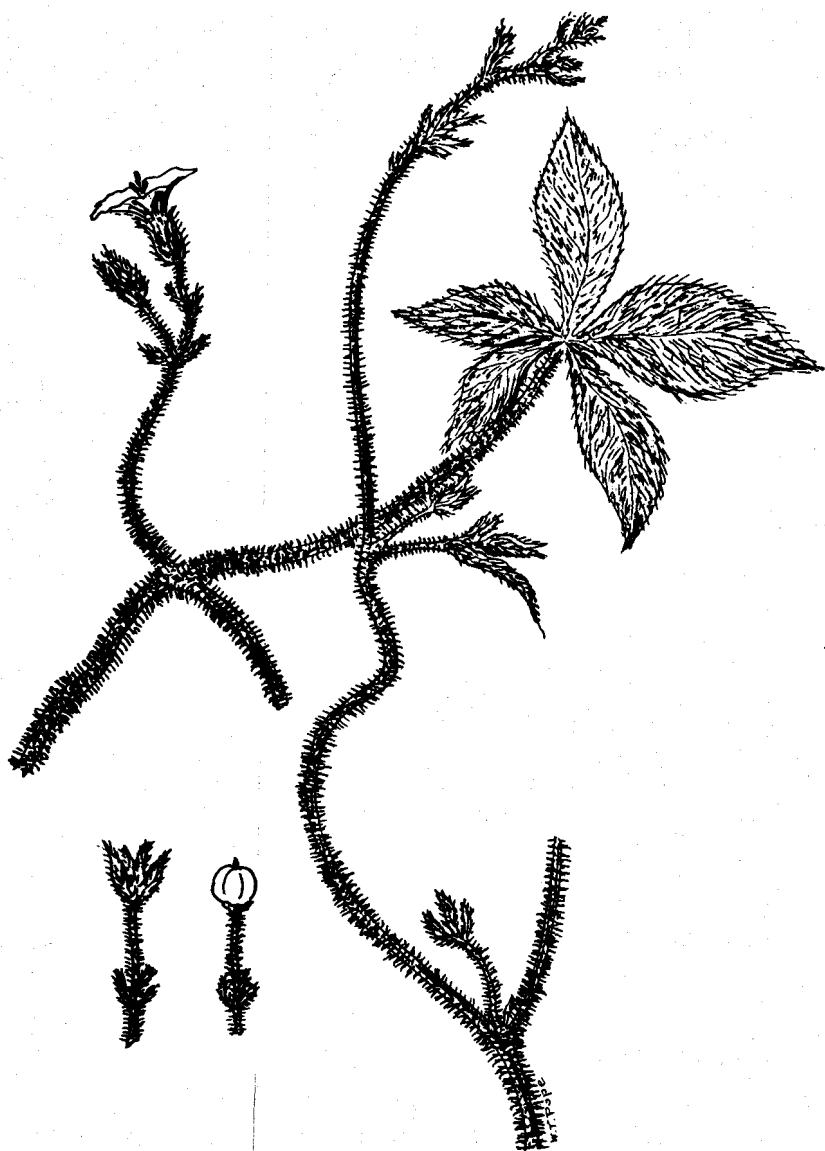
Thrives in dry regions. A weed in wastelands, along roadsides, and in cultivated areas.

---

#### History:

Native to tropical America. Collected in Hawaii by the U.S. Exploring Expedition in 1840.

---



## VERBENACEAE (VERVAIN FAMILY)

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*Clerodendrum japonicum* (Thunb.) Sweet

Synonym: *C. fragrans* (Vent.) R. Br.

---

### PIKAKE-HOHONO, CLERODENDRUM

---

#### Description:

A half-shrubby perennial, 1 to 3 feet high, more or less branching near the top. **Leaves** large, broadly ovate, with base cut off squarely or heart-shaped, margins coarsely toothed. **Flowers** white or pink, usually double and delicately scented, in terminal, compact, flat-topped, hydrangea-like, flower clusters (20).

#### Propagation:

By seed and underground stems.

#### Habitat:

Found in moist regions. A weed in pastures, rangelands, and along roadsides.

---

#### History:

Native to southern China. Introduced early to Hawaii as an ornamental.

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## VERBENACEAE (VERVAIN FAMILY)

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*Lantana Camara* L.

Synonyms: *L. aculeata* L.

---

### LANTANA

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#### Description:

A spreading, thorny shrub, 3 to 6 feet high. **Leaves** heart-shaped, ovate, rough, somewhat wrinkled, margins scalloped, leafstalk short. **Flowers** clustered in compact heads; corolla tubular, expanding into four to five lobes; colors many, varying from yellow or orange, white, pink, and deep red. **Fruit** a little fleshy drupe, wrinkled, in clusters, and eventually splitting into 2 seeds (20).

#### Propagation:

By seed.

#### Habitat:

Found in dry and in wet regions. Thrives in lowlands, valleys, and mountain slopes up to 1,500 feet. A serious pest in cultivated areas, pastures, rangelands, and waste places.

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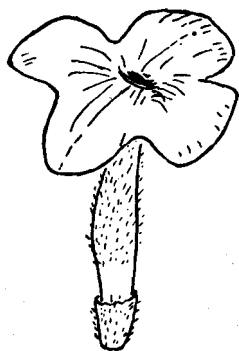
#### History:

Native to tropical America. Introduced to Hawaii in 1859 as a garden ornamental.

#### Notes:

Declared **noxious** for State land leases. Forms dense stands, crowding out forage plants. The plant gives off a strong, peculiar odor.

---



## VERBENACEAE (VERVAIN FAMILY)

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*Stachytarpheta cayennensis* (L. C. Rich.) Vahl

Synonyms: *S. dichotoma* sensu Haw. bot., non Vahl; *Verbena cayennensis* L. C. Rich.

---

### CAYENNE VERVAIN, ROUGH-LEAVED FALSE VERVAIN

---

#### Description:

An erect, woody, freely branching plant 2 to 5 feet high. **Stems** clothed with hairs, angular. **Leaves** opposite or alternate, wrinkled, 2 to 3 inches long, 3/4 to 1-1/2 inches wide, ovate, hairy on both surfaces, green on both sides, margin toothed, sharply contracted at the base, winged leafstalk short. **Flowering stalks** 1 to 1-1/2 feet long, hairy, terminal, only four to six flowers appearing at one time. **Flowers** dark blue-violet to lavender, 3/8 inch across, 5-lobed (two large and three small lobes); corolla tubular, 1/4 to 3/8 inch long, white, smooth; calyx tubular, two-thirds the length of the corolla, hairy; bract 1/4 inch long, narrowly linear and pointed, hairy; flower axis 1/8 inch wide, grooves shallow. **Fruit** 1/4 inch long, 1/16 inch wide, flat, black when ripe, slightly imbedded in a groove (22).

#### Propagation:

By seed.

#### Habitat:

Found in dry and in moderately moist regions at lower and middle elevations. A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Native to tropical America. Accidentally introduced to Hawaii.

#### Notes:

Declared **noxious** for State land leases. Spreads rapidly, crowding out desirable forage. Cayenne vervain differs from the Jamaica vervain by having more slender flower spikes (less than 1/8 inch across) and fruits imbedded in wider grooves (as wide as the spike).

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## VERBENACEAE (VERVAIN FAMILY)

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*Stachytarpheta jamaicensis* (L.) Vahl

Synonym: *Verbena jamaicensis* L.

---

### JAMAICA VERVAIN

---

#### Description:

An annual or perennial, spreading herb, 1 to 6 feet high; lower branches half woody and grayish, upper branches erect, 4-angled, green, more or less purplish, terminating in long slender floral spikes. **Leaves** opposite, slightly hairy or smooth, whitish-green, oblong ovate, 1 to 4 inches long, margins serrate, contracting at base into short leafstalks. **Floral spikes** green, 4 to 12 inches long, at the ends of branches and stems. **Flowers** pale lavender, numerous; calyx narrow, cylindrical, 4- or 5-toothed; corolla tubular, curved outward, small, 1/4 inch across; petals 5, unequal, with white throat; stamens 2; ovary 2-celled. **Fruit** small, 2-seeded, thin, dry, included in the calyx and imbedded one-half or more in a narrow groove in the flower axis (15, 20).

#### Propagation:

By seed.

#### Habitat:

Found in dry and in moderately wet regions from sea level to middle elevations. A weed in pastures, rangelands, cultivated areas, and waste places.

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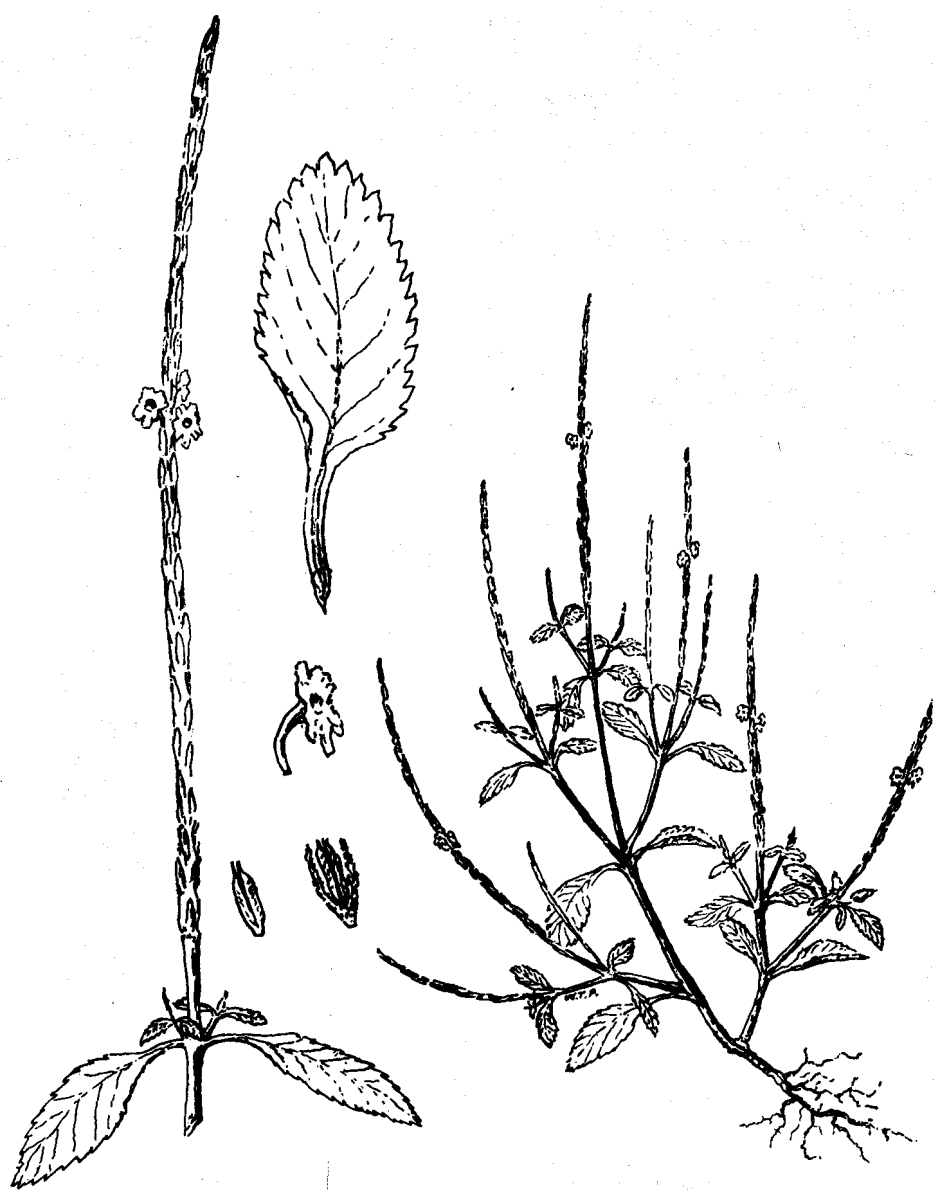
#### History:

Native to tropical America. Of accidental introduction to Hawaii.

#### Notes:

Declared **noxious** for State land leases. Spreads rapidly, crowding out desirable forage.

---



## VERBENACEAE (VERVAIN FAMILY)

---

*Stachytarpheta urticaefolia* (Salisb.) Sims

Synonym: *Cymburus urticaefolius* Salisb.

---

### NETTLE-LEAVED VERVAIN

---

#### Description:

A perennial, woody herb or small shrub, branched. **Stems** smooth, 1 to 4 feet high. **Leaves** ovate, wedge-shaped, sharply pointed at the tip, serrate, 1 to 2 inches long, 3/4 to 1-1/2 inches wide, on leafstalks about 1/4 inch long. **Flowers** blue, sessile, about 3/16 inch long, borne on slender spikes 6 to 12 inches long; bracts lanceolate, ending abruptly with a sharp tip. **Fruit** a nutlet in a drupe, enclosed by a persistent calyx (18).

#### Propagation:

By seed.

---

#### History:

Native to tropical America.

#### Notes:

Declared **noxious** for State land leases. Spreads rapidly, crowding out desirable forage.

---





## VERBENACEAE (VERVAIN FAMILY)

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*Verbena litoralis* HBK.

Synonym: *V. bonariensis* sensu Haw. bot., non L.

---

### VERBENA, OI

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#### Description:

A perennial herb, 1 to 6 feet high. **Stems** slender, smooth, quadrangular. **Leaves** narrow-oblong, 1-1/2 to 2-1/2 inches long, pointed, coarse-toothed, with scattered hairs. **Flowers** blue, tiny, borne on paired, long-stalked, narrow flowering heads (15).

#### Propagation:

By seed.

#### Habitat:

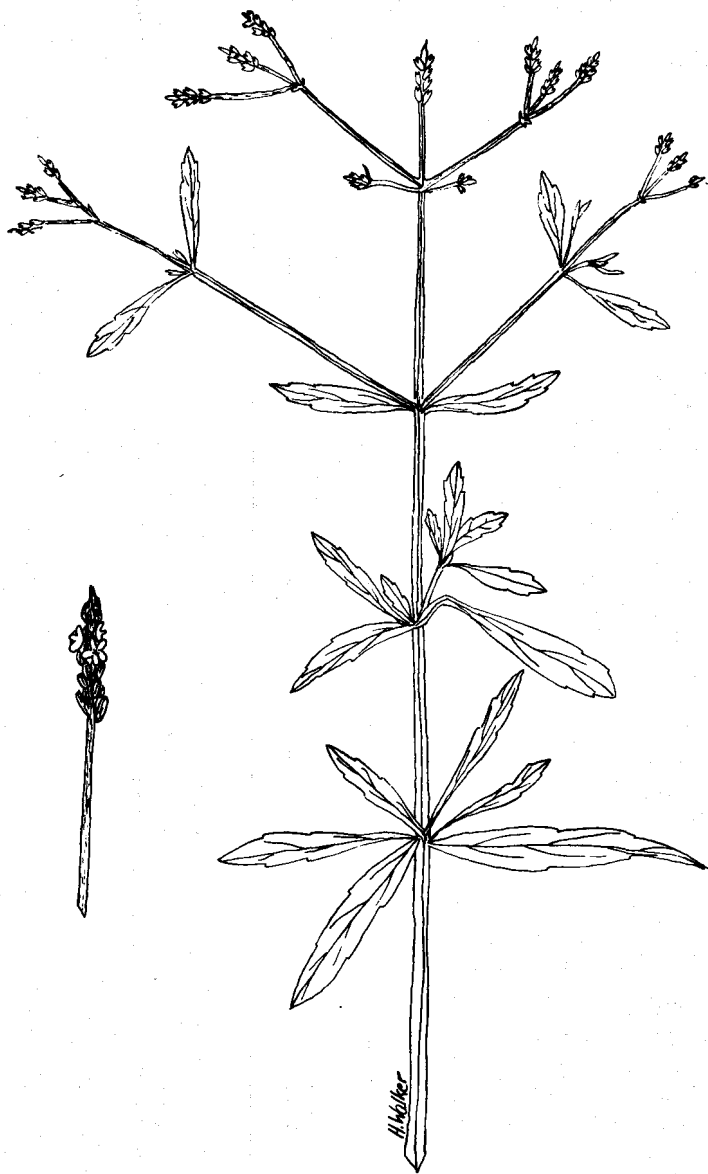
Found at all elevations. A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Native to South America. Introduced early to Hawaii; collected on Oahu by Nuttall in 1835.

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## LABIATAE (MINT FAMILY)

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*Hyptis pectinata* (L.) Poit.

Synonym: *Nepeta pectinata* L.

---

### HYPTIS, COMB HYPTIS

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#### Description:

A coarse herb, 10 to 90 inches high. **Stems** 4-angled, erect, densely hairy. **Leaves** oval, 1 to 3 inches long, bluntly and unevenly serrate, green, faintly hairy above, pale and densely hairy below, sharp pointed at the tip, on leafstalks up to 2 inches long. **Flowers** whitish to rarely purple, in one-sided spiked stems to form elongated inflorescence. **Fruit** a nutlet, black, almost smooth, 1/32 inch long (5).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and wastelands.

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#### History:

Native from Mexico to Brazil.

#### Notes:

Is fast spreading and coarse. Flowers in summer and fall.

---



## LABIATAE (MINT FAMILY)

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*Leonotis nepetaefolia* (L.) Ait., f.

Synonym: *Phlomis nepetaefolia* L.

---

### LIONS-EAR

---

#### Description:

An annual, softly hairy. **Stems** 1 to 6 feet high, square, rather stout, simple or branched. **Leaves** ovate or ovate-triangular, 1-1/2 to 5 inches long, coarsely scalloped, wedge-shaped or almost heart-shaped at the base; clusters dense, about 2 inches in diameter; pedicels about 1/12 inch long. **Flowers** scarlet or orange-yellow; calyx covered with minute soft hairs, becoming about 1/12 inch long, 8-lobed, awn-tipped; corolla about 1 inch long, with shaggy, rather rough hairs, its tube curved, the lower lip much shorter than the upper, with three narrow lobes. **Fruit** a nutlet, about 1/12 inch long, angled (4).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas, pastures, rangelands, and waste places.

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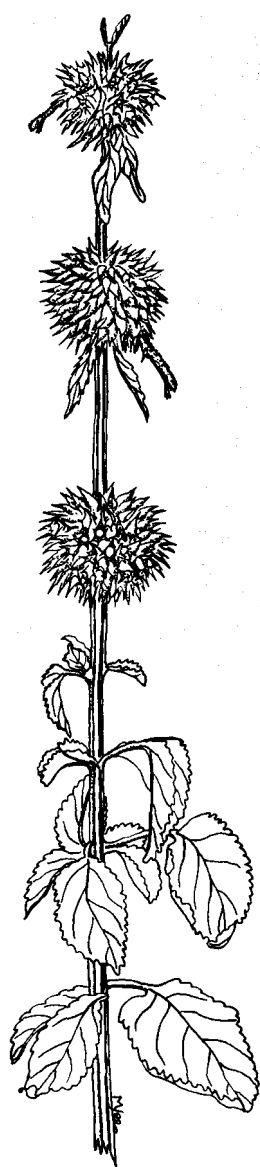
#### History:

Native to tropical Africa. First collected in Hawaii in 1938.

#### Note:

Dried flowers form prickly clusters.

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## LABIATAE (MINT FAMILY)

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*Prunella vulgaris* L.

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### SELF-HEAL, HEALALL

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#### Description:

An herbaceous perennial. **Stems** spreading to upright, often 1 foot long, square, and with sides usually grooved. **Leaves** long ovate or lanceolate, margins entire or toothed, blade narrowing into short petiole. **Flowers** purple to rarely white, in dense terminal and axillary spikes; calyx 2-lobed, the upper with two points and the lower with three; corolla tubular, but with upper lip lengthened, forming an arched hood into which the longer of the two pairs of stamens ascend, and with lower lip 3-lobed and spreading. **Seeds** 4 in number, ovoid (20).

#### Propagation:

By seed and by spreading stems which root at the nodes.

#### Habitat:

Found in the mountains above 4,000 feet. A weed in pastures and rangelands.

---

#### History:

Native to Eurasia.

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## LABIATAE (MINT FAMILY)

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*Salvia coccinea* Juss. ex Murr.

---

### CRIMSON SAGE

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#### Description:

An annual or sometimes perennial plant; all parts whitish due to very fine, soft hairs. **Main stem** 4-angled, hard, others herbaceous, erect, 1 to 3 feet high. **Leaves** 1 to 2 inches long, ovate, with a sharp point, base heart-shaped, on short leafstalks, covered with hairs above and beneath. **Flowers** crimson, in whorls of four to six on a simple raceme; calyx greenish, covered with soft hairs, 2-lobed, with upper or shorter lobe divided into two sharply pointed teeth; corolla with lower lip expanded; stamens 2, slightly shorter than stigmas of pistil. **Seeds** normally 4, pointed, slightly angular, speckled (20).

#### Propagation:

By seed.

#### Habitat:

Abundant in dry regions at lower elevations; grows more robust in regions of greater rainfall. A weed in pastures, rangelands, and waste areas.

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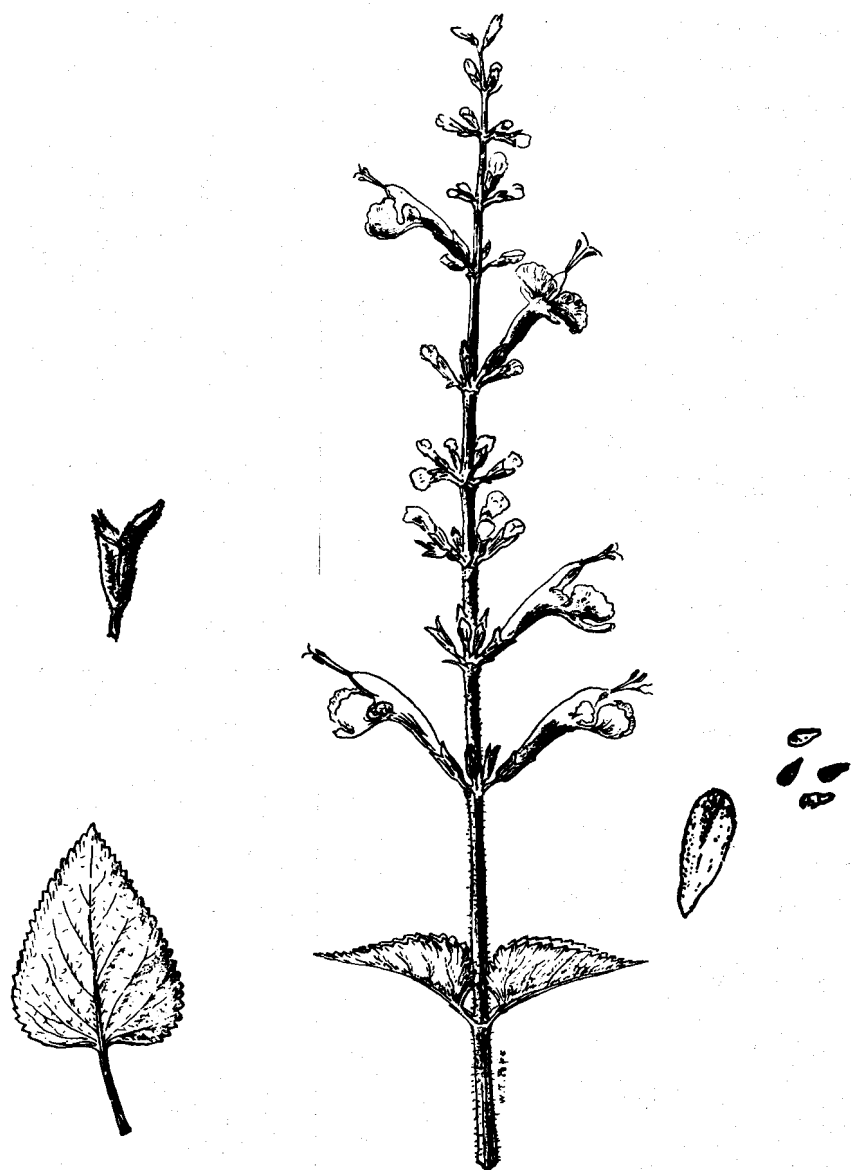
#### History:

Native to Mexico and southern U.S. Mainland. Of early introduction to Hawaii.

#### Note:

Injurious to livestock.

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## LABIATAE (MINT FAMILY)

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*Stachys arvensis* L.

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### STAGGERWEED

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#### **Description:**

An annual weed, spreading to upright, 6 to 18 inches high.

**Stems** 4-angled. **Leaves** stalked, ovate, 1/2 to 1 inch long, with short bristly hairs on both surfaces, with margins scalloped, arranged oppositely in pairs, decreasing in size toward tip of stems, upper leaves branchlike. **Inflorescence** purplish, violet, sometimes pinkish, in terminal branches with whorls of four to six flowers at nodes; calyx bell-shaped, hairy; corolla lip-shaped, 5-toothed, short; stamens 4; pistil 1, with 2-lobed stigma.

**Fruit** consists of 4 nutlets contained in the calyx, brown to blackish when ripe, obovoid and minutely wartlike (20).

#### **Propagation:**

By seed.

#### **Habitat:**

Found in moist regions. A weed in cultivated areas.

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#### **History:**

Native to Europe. Of early introduction to Hawaii.

#### **Note:**

Poisonous to livestock.

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## SOLANACEAE (TOMATO FAMILY)

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*Datura Stramonium* L.

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### JIMSON WEED

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#### Description:

An annual, 2 to 4 feet high. **Stems** smooth, green, hollow, forking. **Leaves** alternate, on stout leafstalks, large, ovate, 3 to 8 inches long, margins irregularly cut and toothed, dark green above, light green below. **Flowers** white, solitary on short stalks, in the forks of branches; corolla trumpet-shaped, 2 to 4 inches long, width across trumpet mouth about 2 inches, margin 5-lobed, 5-pointed; stamens 5, filaments attached to inside of corolla tube a little below the middle.

**Fruit** a capsule, ovoid, rapidly developing, incomplete, 4-celled, 2 inches long, prickly, splitting open at top. **Seeds** many, dark brown, wrinkled and pitted on surface, exceedingly bitter (20).

#### Propagation:

By seed.

#### Habitat:

Found at lower elevations, often in dry regions. A weed in cultivated areas, pastures, and rangelands.

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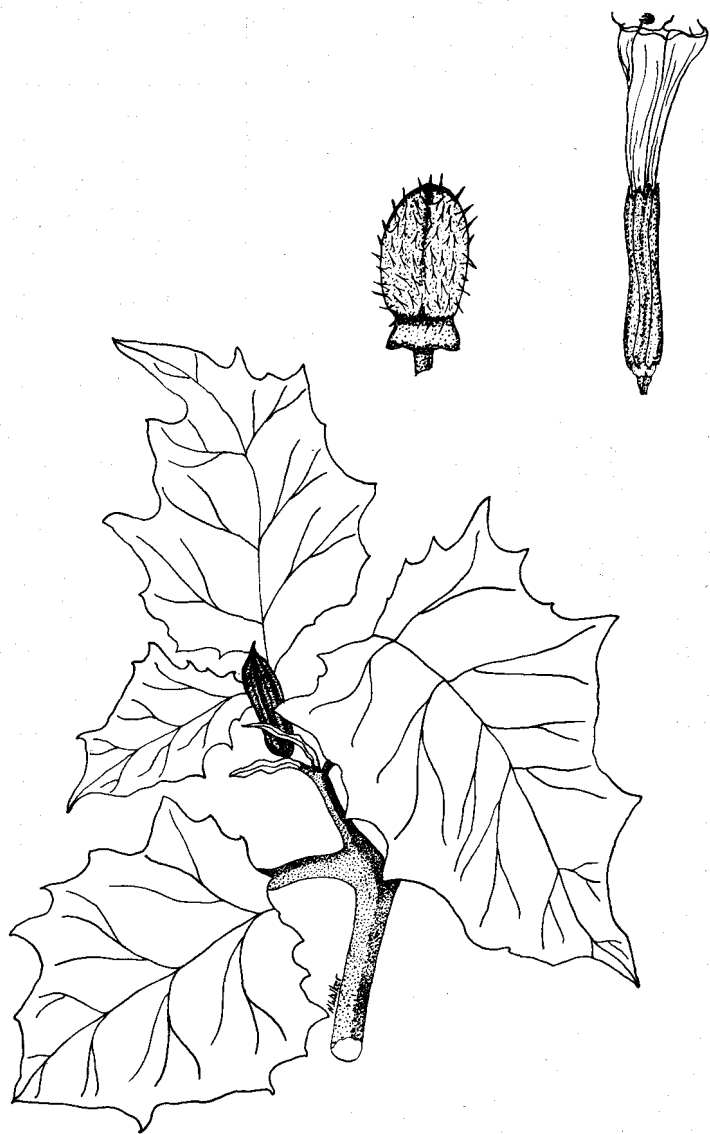
#### History:

Native somewhere between India and the Caspian Sea. Introduced early to Hawaii.

#### Note:

Dangerously poisonous to man and beast.

---



## SOLANACEAE (TOMATO FAMILY)

---

*Nicandra physalodes* (L.) Gaertn.

Synonym: *Atropa physalodes* L.

---

### APPLE OF PERU

---

#### Description:

An annual. **Stems** rather stout, smooth, angled, 2 to 5 feet high, erect, branching. **Leaves** long, ovate, rather thin, 3 to 8 inches long and half as wide, with margins coarsely toothed and leafstalk grooved. **Flowers** solitary on terminal and axillary stalks; calyx 5-parted; corolla bell-shaped, 2 inches long and flaring to about the same width, blue or sometimes white with purple throat; stamens 5, inserted on corolla near its base. **Fruit** a berry, 5-celled, dry-seeded, inedible, about 1/2 inch in diameter (20).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas, pastures, and rangelands.

---

#### History:

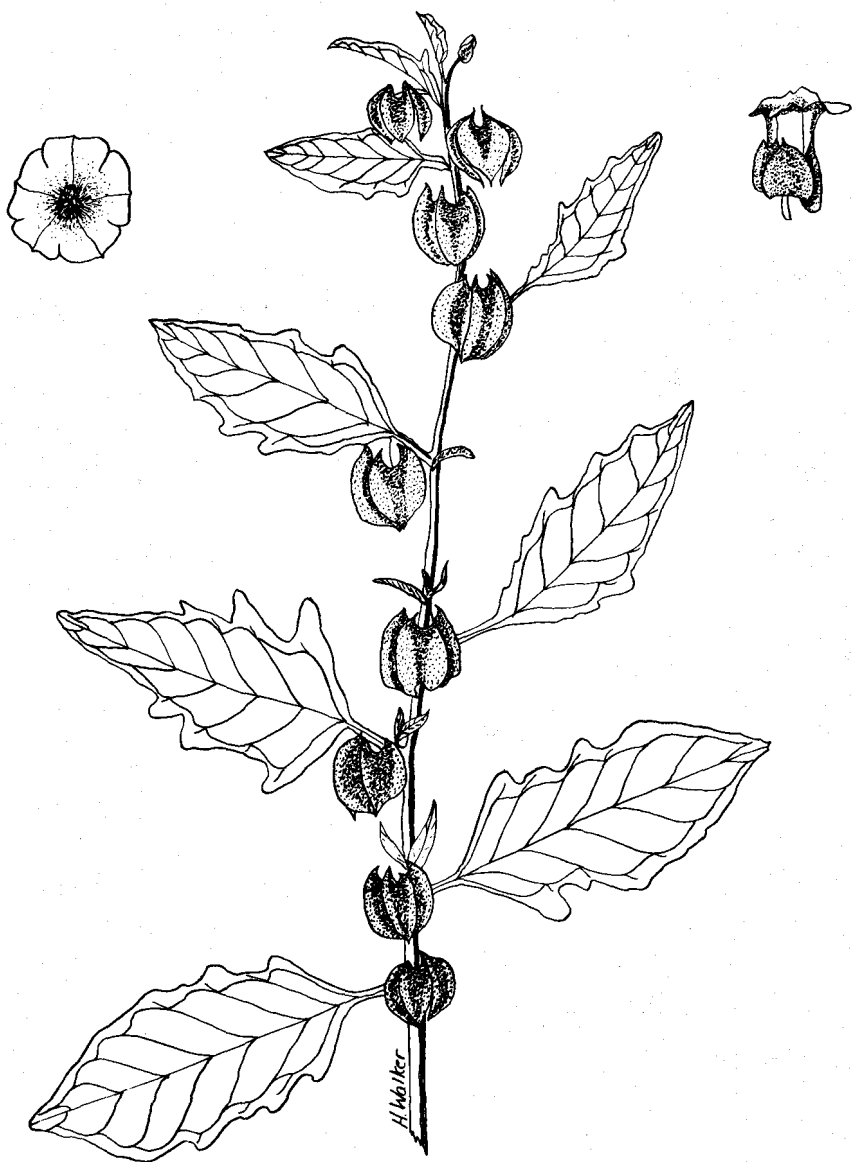
Native to South America. Introduced to Hawaii prior to 1850.

#### Note:

Reported to be poisonous to man and beast.

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## SOLANACEAE (TOMATO FAMILY)

---

*Nicotiana glauca* Grah.

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### TREE TOBACCO

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#### Description:

A smooth shrub or small tree, 8 to 12 feet high, with many slender branches. **Leaves** ovate, pointed or blunt, 2 to 12 inches long, bluish due to a light powdery covering, on leafstalks 1 inch long or more. **Flowers** yellow, clustered at branch ends; calyx tube narrow, 5-toothed; corolla tube softly hairy, three times longer than calyx, 1-1/2 inches long, and after narrowing at the mouth spreads out in five short, rounded lobes. **Fruit** a capsule, 2-celled, 1/2 inch long. **Seeds** many, minute (9, 15).

#### Propagation:

By seed.

#### Habitat:

A common weed in lowland pastures, along roadsides, and in coral fills or sandy places.

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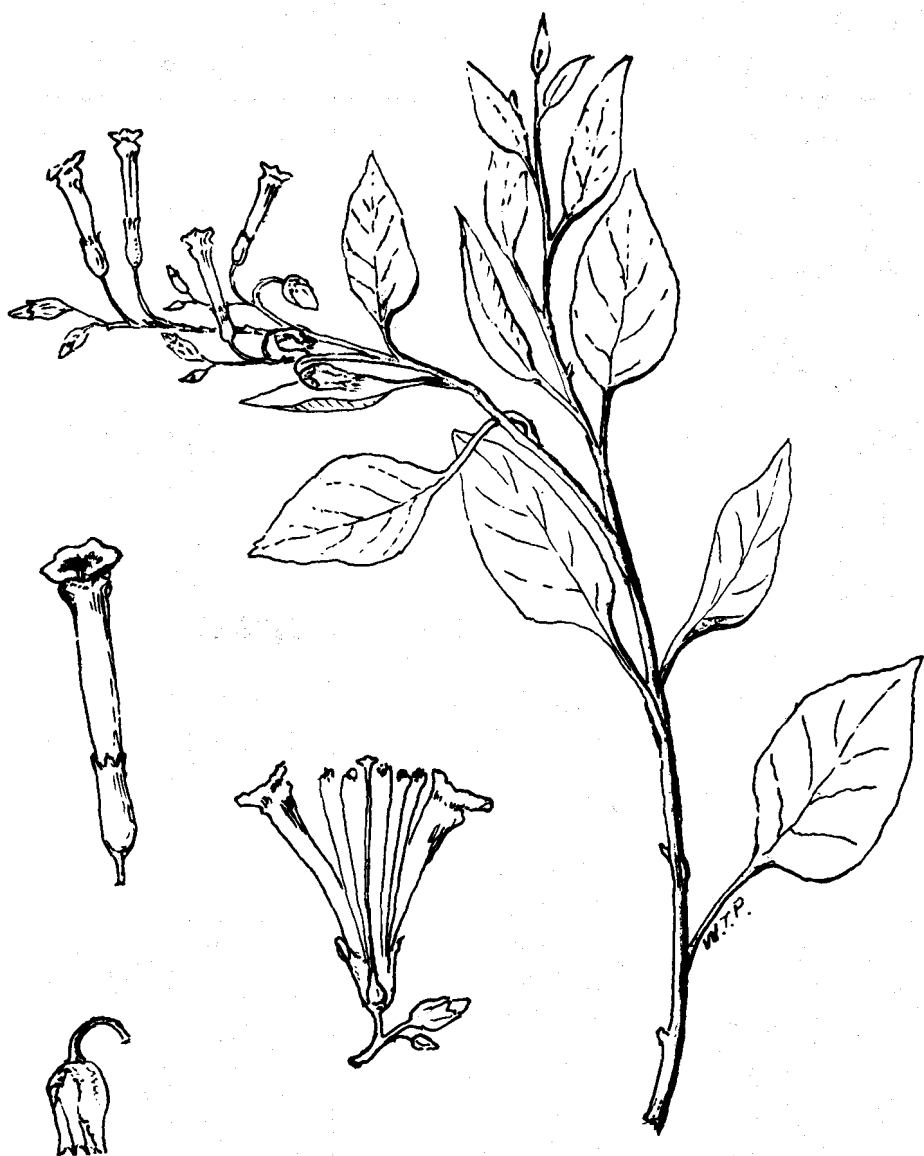
#### History:

Native to Argentina and Uruguay. Introduced to Hawaii, probably from California or Mexico. Cultivated in Honolulu in mid-1800's.

#### Note:

Poisonous to man and livestock.

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## SOLANACEAE (TOMATO FAMILY)

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*Physalis peruviana* L.

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### POHA, CAPE GOOSEBERRY

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#### Description:

A partially erect, spreading shrub, woody at the base, 1 to 3 feet high. **Leaves** scattered, soft, ovate or heart-shaped.

**Flowers** axillary, solitary, bell-shaped, pale yellow with purple blotches within; calyx becomes large, bladderlike and dry, loosely enclosing the fruit. **Fruit** a berry, globular, yellow, about 3/4 inch in diameter. **Seeds** small, in juicy pulp; flesh partly acidic, juicy, with pleasing flavor (20).

#### Propagation:

By seed.

#### Habitat:

Common on open mountain slopes and in clearings from 1,500 to 4,000 feet. A weed in cultivated areas and pastures.

---

#### History:

Native to South America. Introduced to Hawaii prior to 1825.

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## SOLANACEAE (TOMATO FAMILY)

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*Solanum aculeatissimum* Jacq.

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### KIKANIA-LEI, COCKROACH BERRY

---

#### Description:

A perennial, slightly woody, branching 1 to 3 feet high; stems, leaves, and calyxes clothed with down, hairs, and straight yellow thorns to 1/2 inch long. **Leaves** short- to long-stemmed, broad-ovate, 3 to 7 inches long, 3- to 7-lobed. **Flowers** white, 5-lobed, about 1/2 inch across, develop singly or two to five together in short clusters. **Fruit** scarlet, nearly spherical, 1 inch in diameter, dry, with winged seeds (15).

#### Propagation:

By seed.

#### Habitat:

Found up to about 3,000 feet; thrives in open rain-forests. A weed in pastures, rangelands, and waste places.

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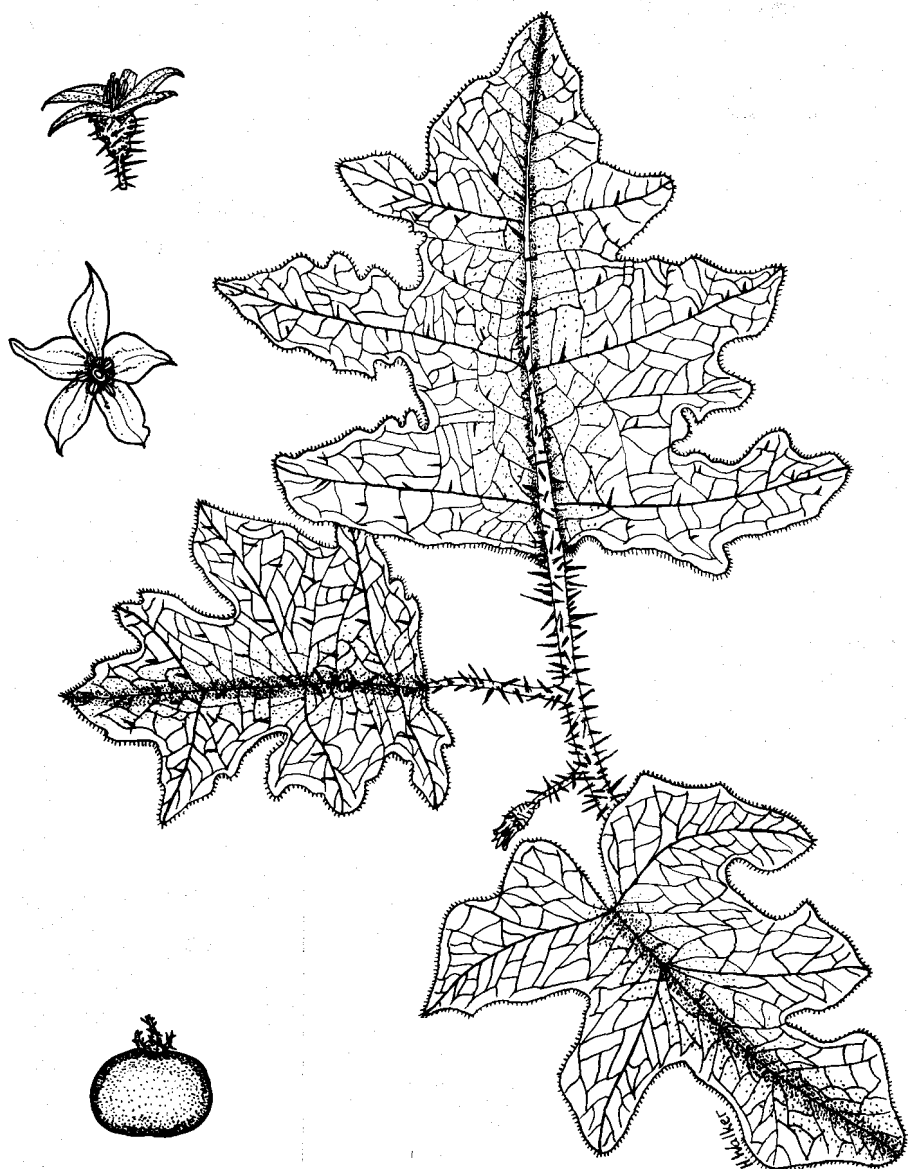
#### History:

Native to tropical America. Introduced to Hawaii in early 1800's.

#### Note:

According to some authorities, plant and fruit are poisonous to man and livestock.

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## SOLANACEAE (TOMATO FAMILY)

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*Solanum nigrum* L.

Synonyms: *S. Fauriei* Lévl.; *S. nodiflorum* sensu Dunal, non Jacq.

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### POPOLO

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#### Description:

A smooth herb, 1 to 3 feet high. **Leaves** thin, ovate, 1/2 to 4 inches long, with more or less wavy margins. **Flowers** white, 3 to 10, each about 1/4 inch wide, borne in suspended, umbel-like clusters. **Fruit** a berry, juicy, black, about 1/4 inch in diameter (15).

#### Propagation:

By seed.

#### Habitat:

Common in dry areas and open forests from sea level to about 5,000 feet. A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Found throughout temperate and tropical regions. Probably of accidental introduction to Hawaii.

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## SOLANACEAE (TOMATO FAMILY)

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*Solanum sodomium* L.

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### APPLE OF SODOM

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#### Description:

A straggling plant, almost a shrub, 2 to 3 feet high. **Stems** branched and foliage armed with stiff, sharp thorns. **Leaves** ovate, oblong, and deeply divided into five to seven irregular lobes. **Flowers** blue or light blue; calyx 5-lobed, each armed with one or more thorns; corolla about 1 inch across, parted more than half way to the base into five angular lobes; anthers elongate, 1/4 inch, inserted near the base of the corolla, with short filaments; ovary hairless. **Fruit** a berry, 1-1/4 to 1-1/2 inches in diameter, surface smooth, yellow, with general appearance of a tomato. **Seeds** without marginal wings, numerous (20).

#### Propagation:

By seed.

#### Habitat:

Common in dry lowlands. A weed in pastures, rangelands, and waste places.

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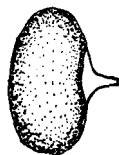
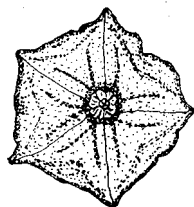
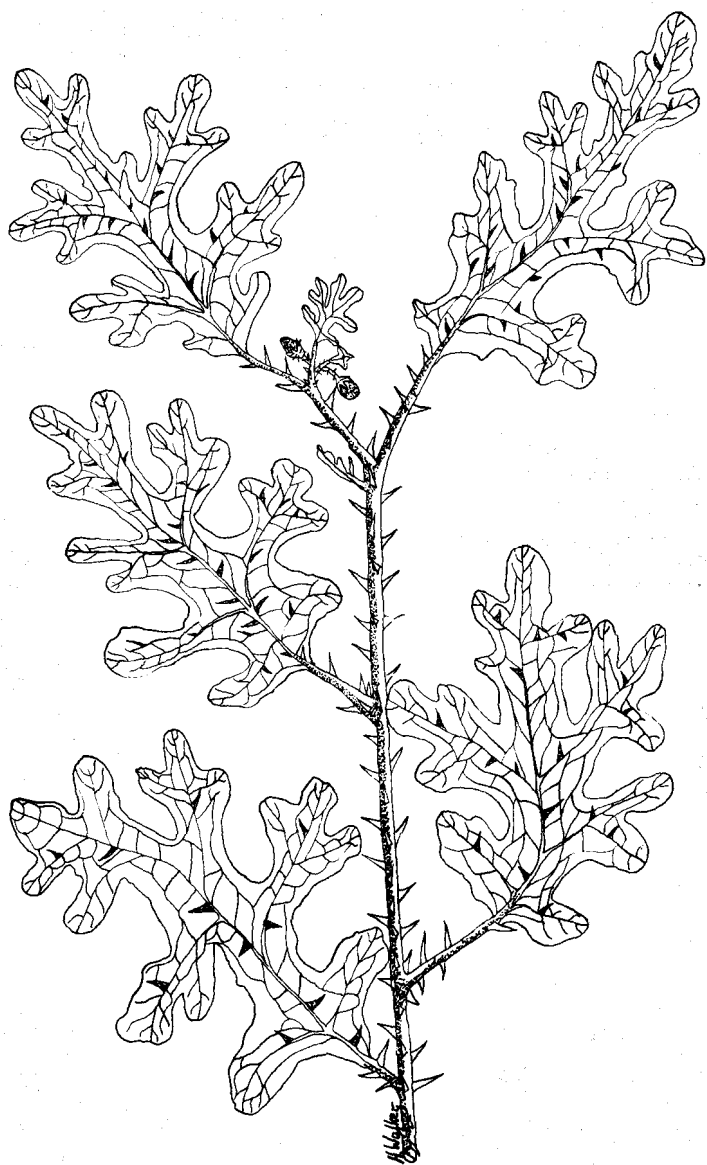
#### History:

Native to the Mediterranean region. First reported in Hawaii by Heller in 1897.

#### Notes:

A pest with sharp spines on leaves and stems, known to be poisonous.

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## ACANTHACEAE (ACANTHUS FAMILY)

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*Thunbergia fragrans* Roxb.

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### WHITE THUNBERGIA

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#### Description:

A small low vine. **Stems** slender, climbing. **Leaves** lanceolate to triangular-ovate, heart-shaped or almost heart-shaped, 1 to 3 inches long, mostly angularly toothed on each side of the base, rough on both sides. **Flowers** white, axillary; corolla tube narrow, the expanded part of the petal spreading, 1-1/2 inches across, lobes end abruptly and toothed at the end (3).

#### Propagation:

By seed and cuttings.

#### Habitat:

Found from sea level to 4,000 feet; prefers damp areas and heavy soils. A weed in cultivated areas and wastelands.

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#### History:

Native to India.

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## PLANTAGINACEAE (PLANTAIN FAMILY)

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*Plantago lanceolata* L.

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### NARROW-LEAVED PLANTAIN, BUCKHORN

---

#### Description:

An herb with a short, thick, underground stem having many branching rootlets; plant stemless. **Leaves** tufted about the crown, long, lanceolate, thick, parallel-veined, 3- to 7-ribbed, 1 to 8 inches long. **Flowers** greenish, small, borne in short spikes at the summit of slender, finely grooved stalks. **Fruit** a capsule. **Seeds** 2 in number, small, shiny, brown (20).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and lawns.

---

#### History:

Native to Eurasia.

#### Notes:

Declared **noxious** in Regulation 2. A prolific seeder which spreads rapidly.



## PLANTAGINACEAE (PLANTAIN FAMILY)

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*Plantago major* L.

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### BROAD-LEAVED PLANTAIN

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#### Description:

A perennial herb, with compact crown and fibrous roots, plant stemless. **Leaves** all basal, long ovate, entire, 1 to 10 inches long, 5- to 9-ribbed, on long leafstalks. **Flowers** greenish, small, sessile, borne in long slender spikes; flower stalks usually longer than leafstalks. **Fruit** a 2-celled capsule. **Seeds** 4 to 8, small, black (20).

#### Propagation:

By seed.

#### Habitat:

A weed in cultivated areas and lawns.

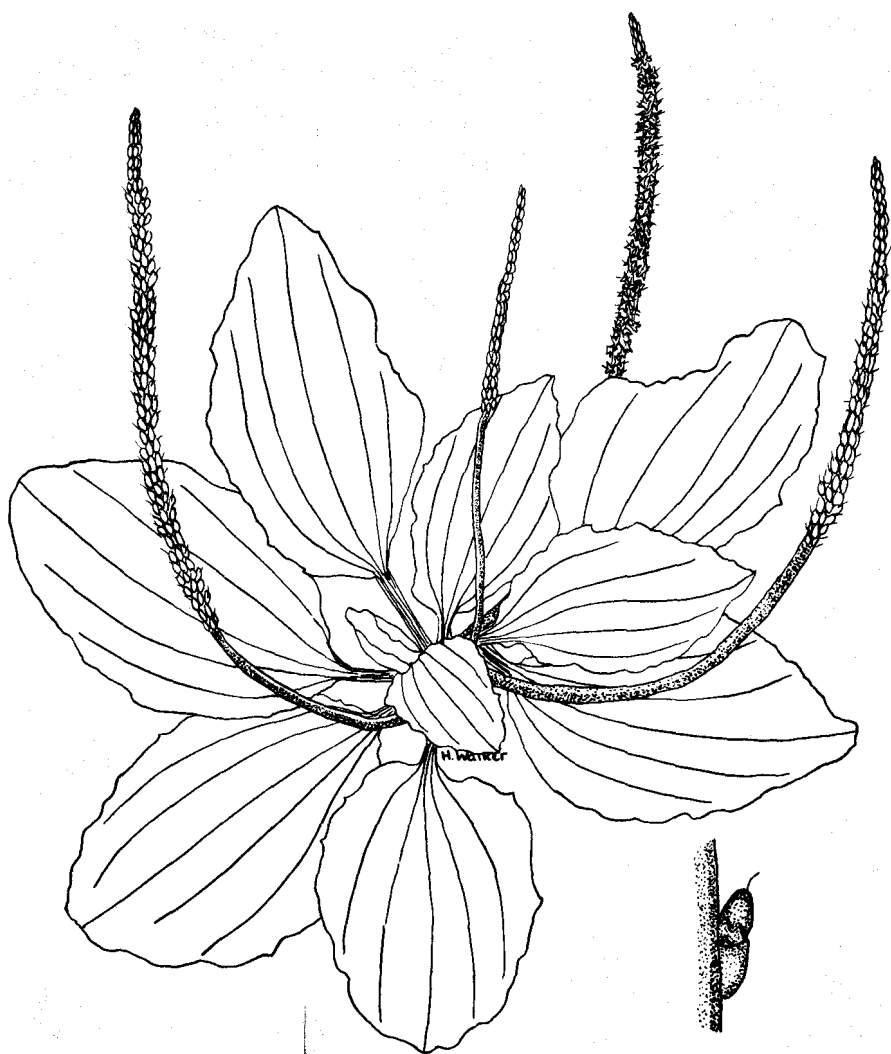
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#### History:

Native to Eurasia.

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## RUBIACEAE (COFFEE FAMILY)

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*Borreria laevis* (Lam.) Griseb.

Synonym: *Spermacoce laevis* Lam.

---

### BUTTONWEED

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#### Description:

A slightly hairy plant; branches spreading or ascending, 6 to 18 inches long, somewhat angled. **Leaves** oblong to oval-lanceolate, 3/4 to 1-1/2 inches long, sharply pointed at the tip, narrowed at the base into short petioles, pinnately veined; stipular sheath almost ends abruptly, bearing several bristles 1/6 to 1/4 inch long. **Flowers** white, about 1/12 inch across, headlike and clustered in the axils; calyx lobes 4, ovate, minute. **Fruit** obovoid, about 1/12 inch long. **Seeds** oblong, marked with lines or ridges (4).

#### Propagation:

By seed.

#### Habitat:

Found in dry and wet regions. A weed in lawns, cultivated areas, and waste places.

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#### History:

Native to tropical America.

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## RUBIACEAE (COFFEE FAMILY)

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*Hedyotis biflora* (L.) Lam.

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### HEDYOTIS

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#### Description:

An annual or perennial, up to 1 foot high. **Stems** erect, or reclining with tips growing upwards. **Leaves** linear to linear-lanceolate, 1/2 to 1-1/2 inches long. **Flowers** white, insignificant, two to five (generally four), axillary or terminal; sepals about 1/32 inch long; corolla 4-lobed, 1/16 inch long. **Fruit** a capsule, about 1/16 inch long, dehiscent across the top. **Seeds** numerous, angular, tiny (8).

#### Propagation:

By seed.

#### Habitat:

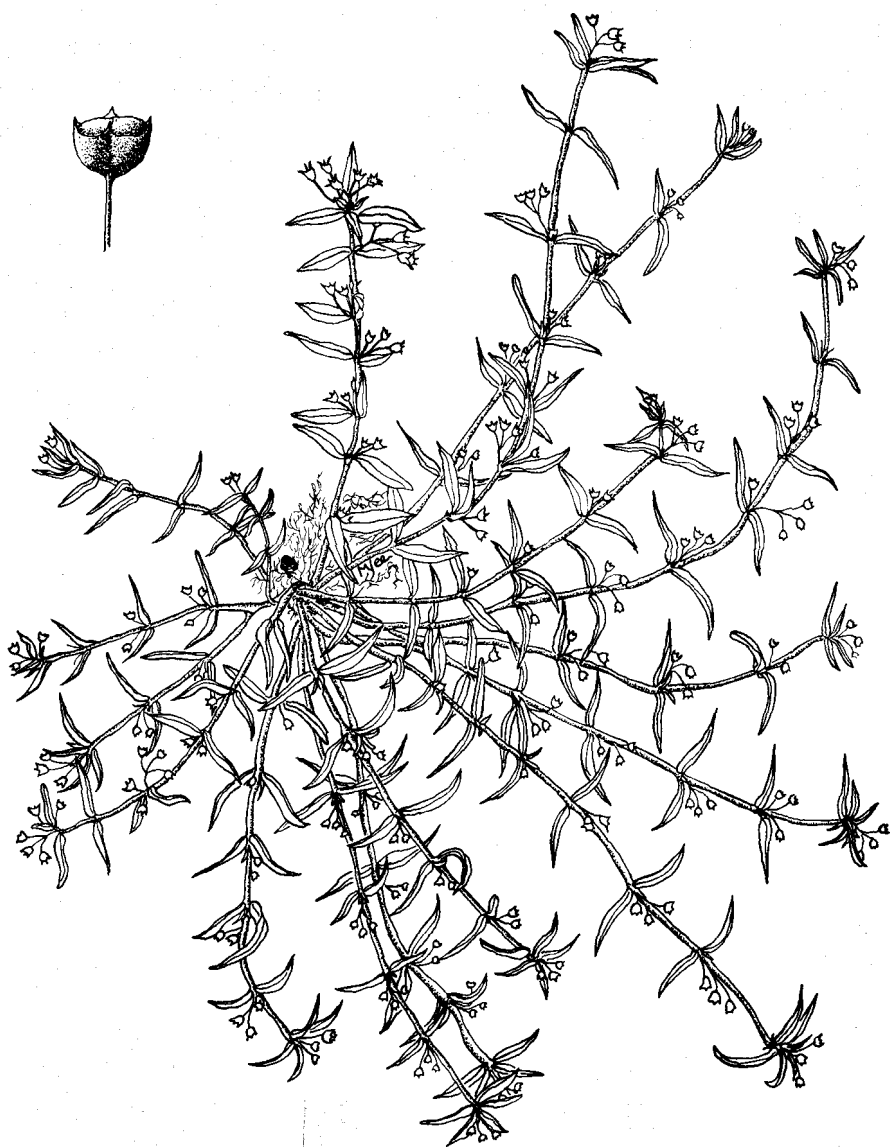
A weed in gardens, along roadsides, and in waste places, especially wet areas.

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#### History:

Found from India to China, Malaya, and Polynesia.

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## RUBIACEAE (COFFEE FAMILY)

---

*Paederia foetida* L.

---

### MAILE PILAU

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#### Description:

A tall, smooth-stemmed, twining perennial, woody at the base. **Leaves** opposite, ovate or lanceolate, 2 to 3 inches long. **Flowers** white or pale pink, pink or red inside, arranged in axillary clusters which often have the appearance of long panicles bearing numerous leaves; calyx very short, 5-toothed; corolla funnel-shaped, 1/2 to 3/4 inch long; stamens 5, anthers hidden between hairs of corolla throat; pistil with two linear, twisted branches. **Fruit** berrylike, rather dry, 2-seeded (20).

#### Propagation:

By seed. Spreads rapidly.

#### Habitat:

Found in valleys and in mountainous regions. A weed in waste places and cultivated areas.

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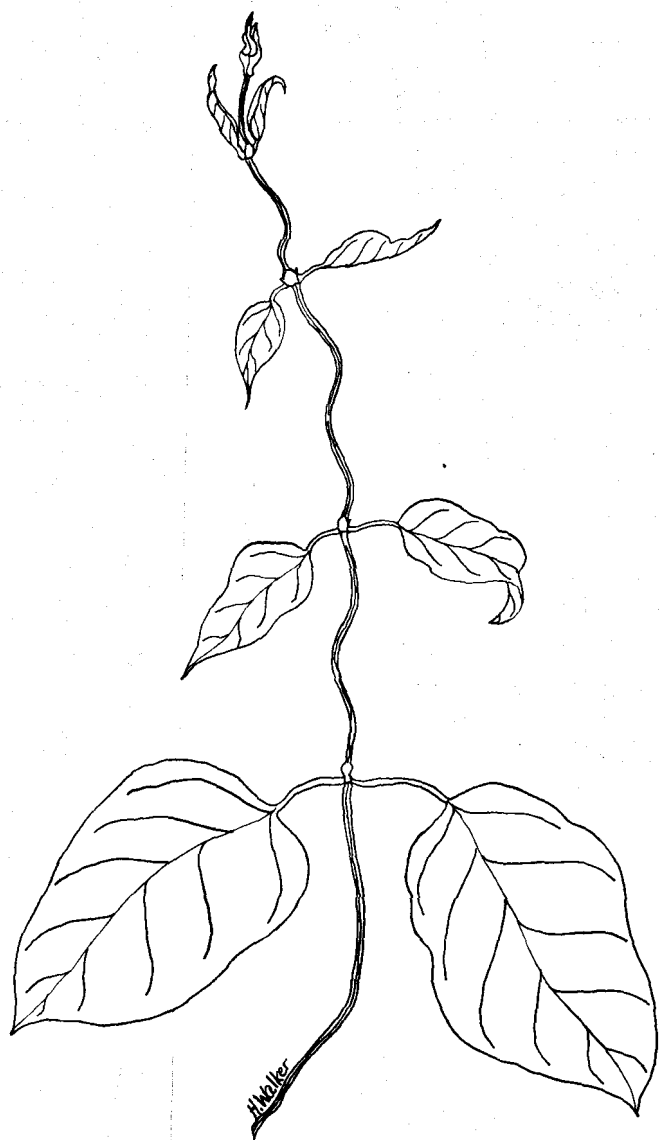
#### History:

Native from India to Borneo. Accidentally introduced to Hawaii about 1854.

#### Note:

Gives off a garliclike odor when moved slightly.

---



## RUBIACEAE (COFFEE FAMILY)

---

*Richardia brasiliensis* Gomez

Misdetermined as *R. scabra* (L.) St. Hil.

---

### RICHARDSONIA

---

#### Description:

A small spreading herb, with hairy stems. **Leaves** without leafstalks, or nearly so, oval in shape, 1 to 1-1/2 inches long, 1/3 to 1/2 inch wide, margins rough, the nerves underneath covered with short stiff hairs. **Flower heads** white with a cast of blue, clustered about the nodes above the points of leaf attachment; calyx a small whorl, consisting of five or six pointed lobes; corolla twice as long as calyx, funnel-shaped, 5- or 6-lobed. **Fruit** splitting into three or four obovate, flattish units (20).

#### Propagation:

By seed.

#### Habitat:

Found in wet regions. A weed in cultivated areas.

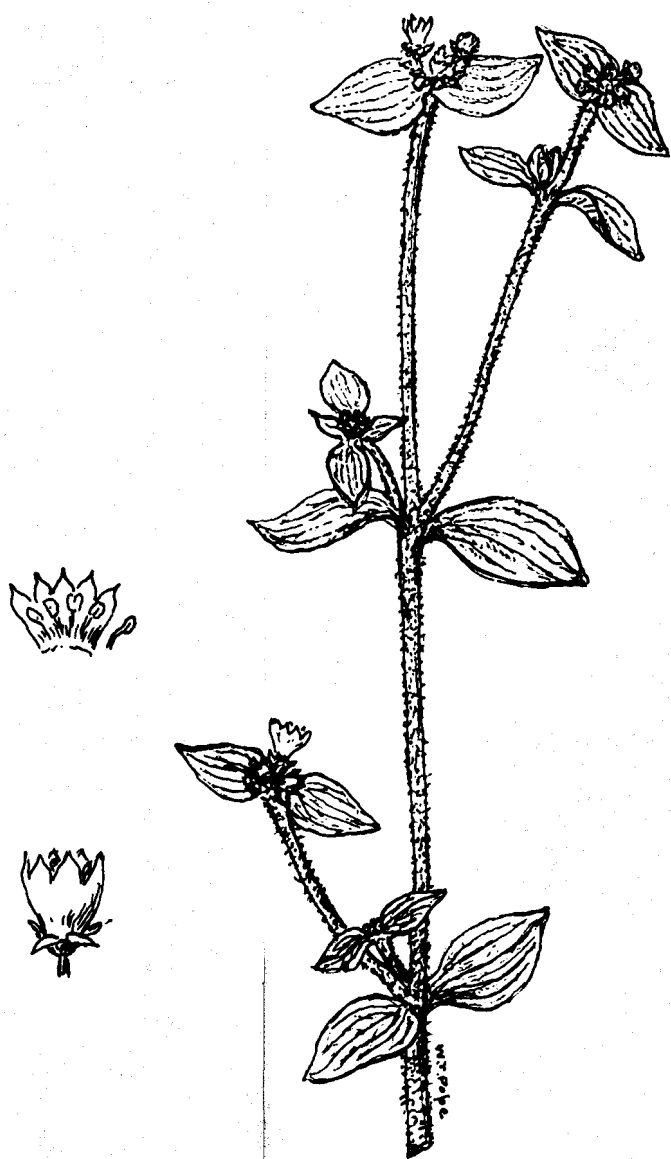
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#### History:

Native to Central America.

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## CUCURBITACEAE (GOURD FAMILY)

---

*Cucumis dipsaceus* Ehrenb. ex Spach

---

### WILD SPINY CUCUMBER

---

#### Description:

An annual herbaceous vine (similar to that of the garden cucumber in all parts except the fruit); stems long, running, angular; both stems and leaf-parts hairy or prickly. **Leaves** rounded, heart-shaped or kidney-shaped, sometimes with rounded lobes; tendrils simple, opposite the leaves. **Flowers** of two forms -- sterile flowers in clusters and fertile ones solitary, mostly short-stalked from the leaf axils; sepals 5; corolla bright yellow, bell-shaped, deeply 5-parted, with sharp pointed lobes; stamens 3; style 3-parted; each stigma 2-lobed; ovary 3-celled. **Fruit** 1 to 3 inches long, oblong, toward maturity becoming tough and densely surrounded with flexible yellow spines; interior filled with pulp and seeds similar to those of the edible cucumber and cantaloupe (20).

#### Propagation:

By seed.

#### Habitat:

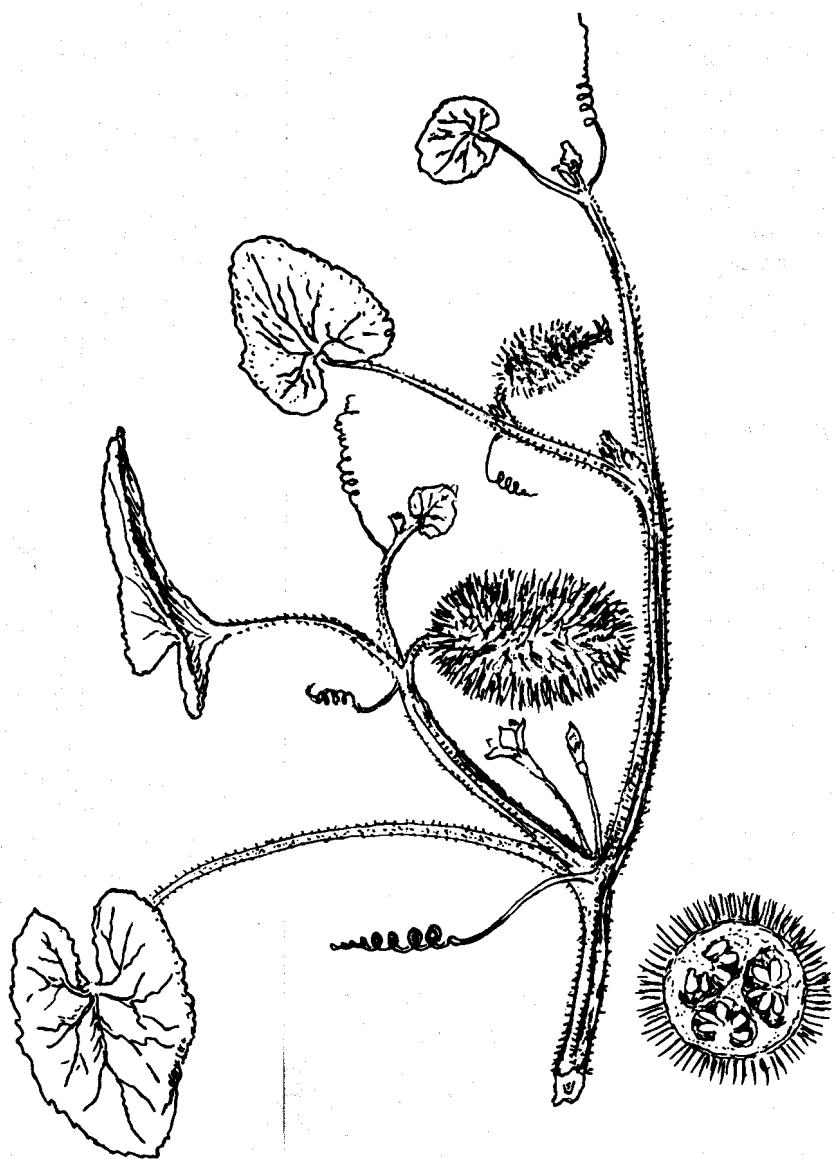
Found in arid, sunny regions at lower elevations. A weed in pastures, rangelands, and waste places.

---

#### History:

Native to Arabia. Introduced to Hawaii for its curious fruit.

---



## CUCURBITACEAE (GOURD FAMILY)

---

*Momordica Charantia* L.

---

### BALSAM APPLE, PERIA

---

#### Description:

A slender, graceful, climbing twiner. **Leaves** heart-shaped, spherical in outline, 3 inches across, 3- to 5-lobed, with margins slightly notched. **Flowers** solitary on long stalks; corolla about 1 inch across, light yellow and often with a blackish center. **Fruit** orange, 2 to 3 inches long, enlarged at the middle, pointed at both ends, nearly smooth or covered with ridges. **Seeds** flattened, light colored, partially imbedded in a bright red pulp, which is attractive when the fruit bursts at maturity (20).

#### Propagation:

By seed and underground stems.

#### Habitat:

Found in dry, rocky regions and moist forest regions at lower elevations. A weed in cultivated areas and wastelands.

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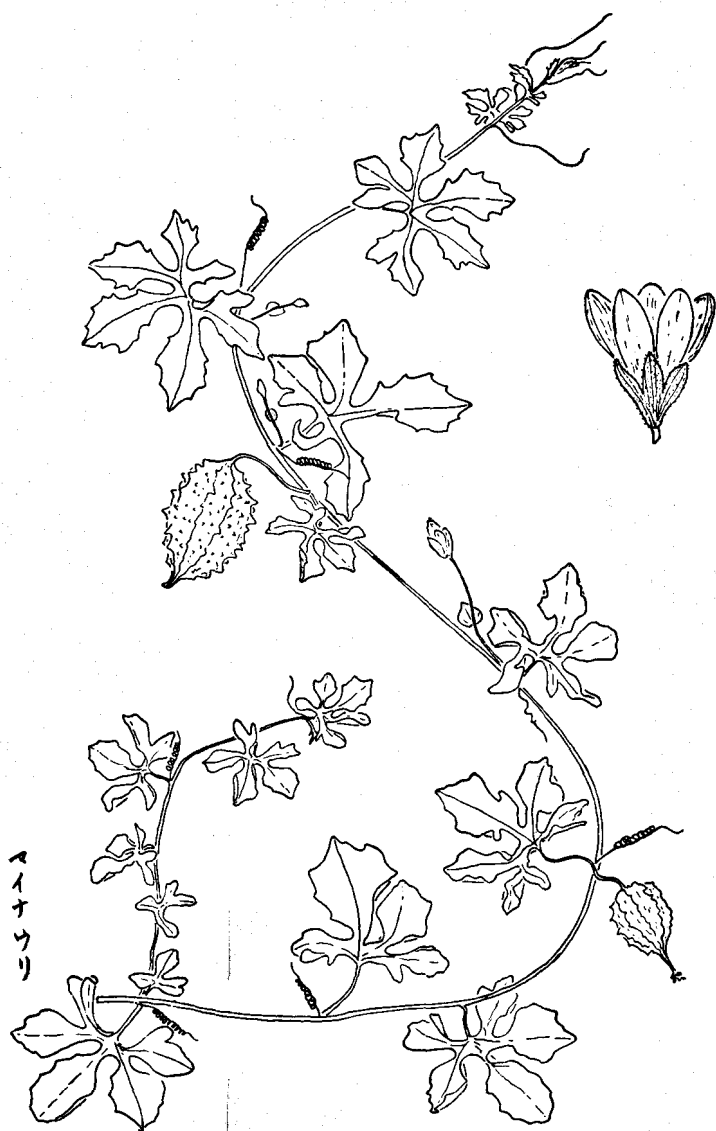
#### History:

Native to Asia.

#### Notes:

Has a disagreeable flavor and is poisonous in some regions. *M. charantia* L. (balsam pear) is cultivated for its fruit, which is larger, oblong, and warty.

---



マイナウリ

## LOBELIACEAE (LOBELIA FAMILY)

---

*Laurentia longiflora* (L.) Engl.

Synonyms: *Lobelia longiflora* L., *Isotoma longiflora* (L.) Presl, *Hippobroma longiflora* (L.) G. Don

---

### STAR-OF-BETHLEHEM

---

#### Description:

A perennial herb, 1 to 2 feet high or more, with few or no branches.

**Leaves** narrow, sessile, 2 to 6 inches long, margins cut into many pointed, toothed lobes. **Flowers** white, erect, starlike, short-stemmed, borne singly at leaf axils; calyx short, ribbed, with five narrow, toothed lobes about 1/2 inch long; corolla tube about 3 inches long, spreading at the top to 1-1/2 inches across. **Fruit** a nodding capsule, about 1/2 inch long (15).

#### Propagation:

By seed.

#### Habitat:

Found in wet regions. A weed in pastures, rangeland, and along roadsides.

---

#### History:

Native to tropical America.

#### Note:

The milky sap is very poisonous to livestock and man; it may produce blindness.

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## COMPOSITAE (DAISY FAMILY)

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*Acanthospermum australe* (Loefl.) Ktze.

Synonyms: *A. brasilum* Schrank, *Melampodium australe* Loefl.

---

### STAR-BUR, SPINY-BUR

---

#### Description:

A creeping, freely branching annual, 4 to 24 inches long. **Stems** smooth, or covered with short hairs. **Leaves** opposite, 1 to 1-1/2 inches long, 1/2 to 1 inch wide, green, ovate to oval, with a winged leafstalk, margin coarsely toothed, upper surface smooth, lower surface sticky-dotted and sparsely covered with very minute hairs. **Flower heads** solitary, inconspicuous, developing at branch bases; each head about 1/4 inch across, with a few yellow or white marginal florets surrounding yellow central florets. **Fruit** star-shaped, 1/2 to 3/4 inch across, covered with spines curved at the tip. **Seed** one per fruiting structure, black, narrowly oblong (15, 22).

#### Propagation:

By seed. Spines on star-shaped fruit cling to clothes and to fur of animals.

#### Habitat:

Found in dry regions. A weed in cultivated areas.

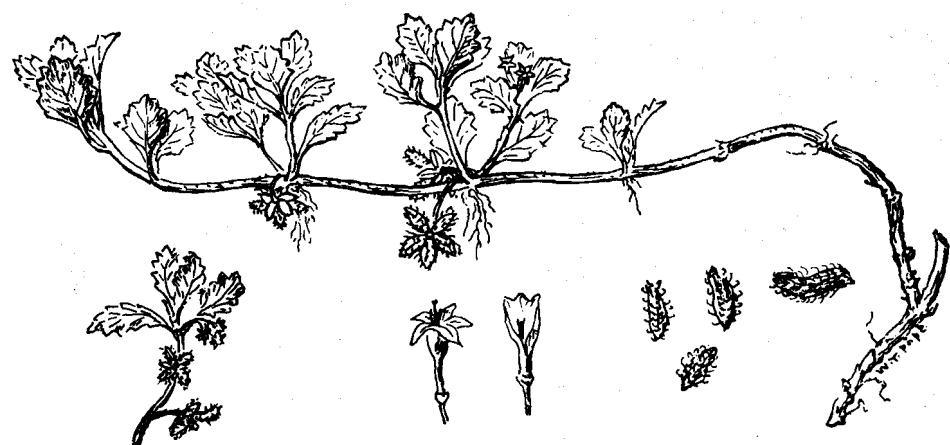
---

#### History:

Native to tropical America.

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## COMPOSITAE (DAISY FAMILY)

---

*Acanthospermum hispidum* DC.

---

### STAR-BUR

---

#### Description:

An erect, branching annual 1-1/2 to 4 feet high. **Leaves** opposite, sessile, membranous, 1 to 2 inches long. **Flower heads** solitary and almost sessile in the leaf axils. **Fruit** 5 to 10 achenes, arranged in the form of a star, covered with hooked spines -- the two terminal ones straight and longer than the rest (2).

#### Propagation:

By seed. Hundreds of seeds are produced by each plant. The hooked spines cling to animals, clothing, and automobile tires.

#### Habitat:

At present confined to the coastal flat on the west end of Molokai. A weed in lowland pastures and rangelands in dry regions.

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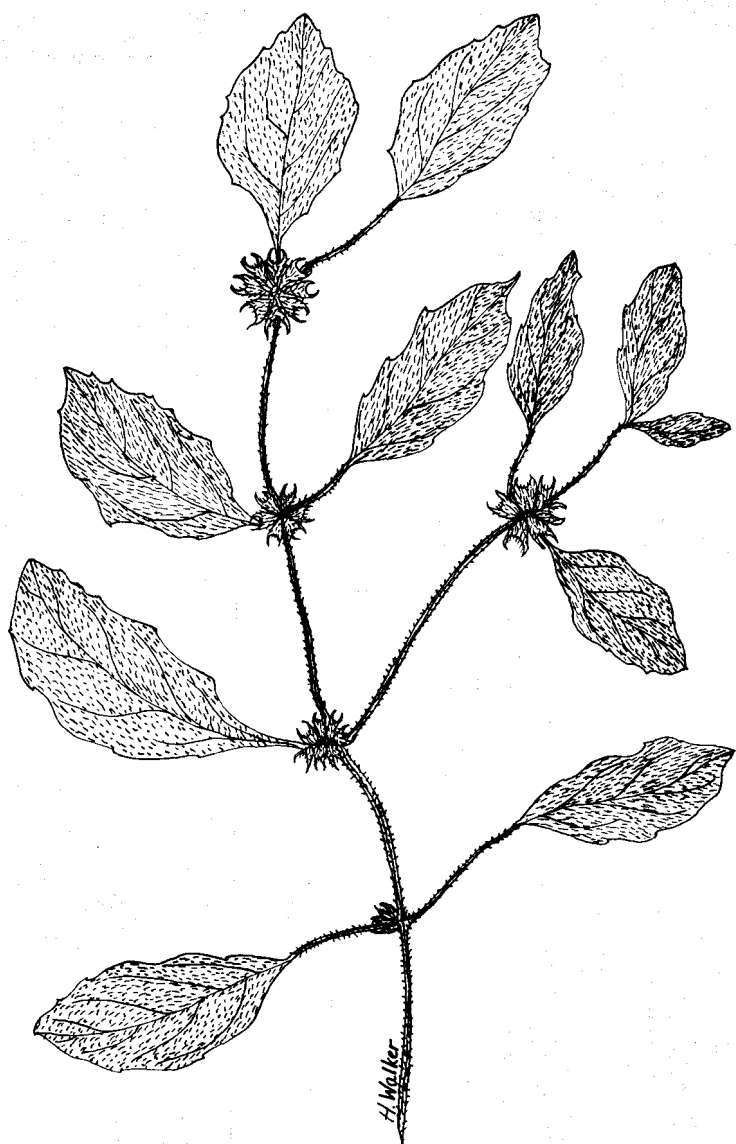
#### History:

Native to tropical America. Accidentally introduced to Hawaii.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Fast growing. Of no forage value.

---



## COMPOSITAE (DAISY FAMILY)

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*Ageratum conyzoides* L.

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### AGERATUM

---

#### Description:

An erect, branching annual, 1 to 2 feet high. **Stems** cylindrical and hairy. **Leaves** opposite, ovate, 3/4 to 3 inches long, on hairy leafstalks half as long as the blade, margin scalloped, surfaces rough and venation prominent. **Flower heads** blue (rarely white), each 1/3 inch or less in diameter, packed in broad and more or less flat-topped clusters. **Fruit** an achene, 1/16 inch long, black, angled, with small white cap at lower end; bristles 5, lanceolate, with upward turning spines, slightly longer than achene (20, 22).

#### Propagation:

By seed. One flower head produces many seeds which are dispersed by wind and water.

#### Habitat:

Found in dry regions; prefers moist regions. A weed pest in the wet regions, in cultivated areas, and along roadsides.

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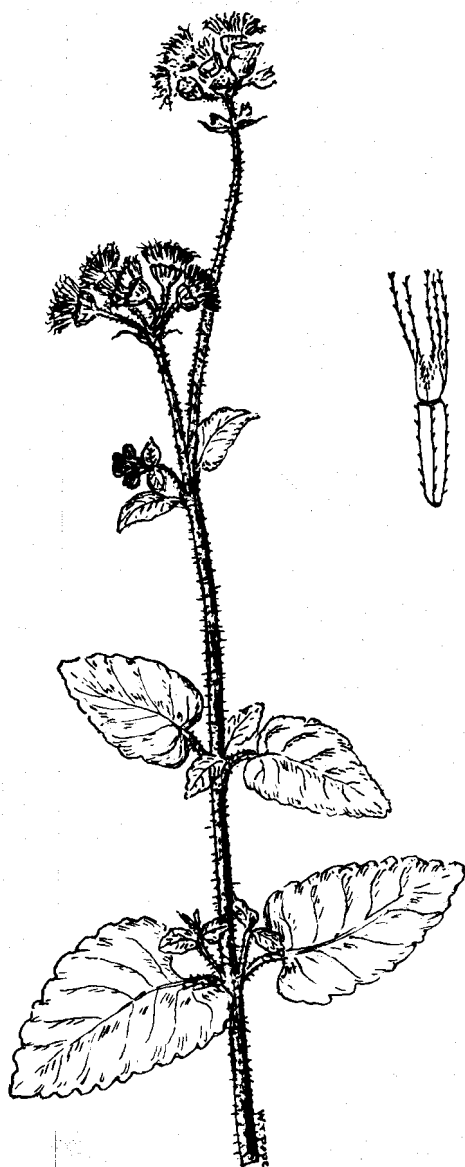
#### History:

Native to tropical America.

#### Note:

Also cultivated as an ornamental.

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## COMPOSITAE (DAISY FAMILY)

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*Ambrosia artemisiaefolia* L.

---

### COMMON RAGWEED

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#### Description:

A branching upright annual, 1 to 4 feet high, rough-hairy.

**Leaves** opposite below, alternate above, thin, much divided, smooth above and covered with close white hairs beneath.

**Flowers** yellowish-green, small and numerous, arranged in racemes with the male flowers above and female flowers below. **Fruit** small, achenelike, about 1/8 inch long, ovoid, grayish, rigid, with a beaked crown surrounded by one row of four to six short, spiny points (20).

#### Propagation:

By seed. Viable seeds may survive in the soil for years until conditions are favorable for germination.

#### Habitat:

A weed in cultivated areas and along roadsides.

---

#### History:

Native to the Western Hemisphere from Nova Scotia to Brazil. Accidentally introduced to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. Often confused with false ragweed; the distinguishing characteristic is the row of four to six short, straight spines on the tiny fruit. The plant establishes itself quickly and is a cause of hay fever.

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## COMPOSITAE (DAISY FAMILY)

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*Bidens pilosa* L.

---

### SPANISH NEEDLE, BEGGAR TICK

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#### Description:

An erect annual, 1 to 3 feet high; stems and leaves possess many whitish hairs. **Leaves** simple or trifoliolate, normally about 2 inches long, with serrate margins. **Flower heads** yellow, sparse, on long stems at branch tips. **Fruit** an achene, straight or slightly curved, 4-angled, 2- or 3-awned, the awns being about quarter the length of the seed and strongly barbed (20).

#### Propagation:

By seed. One flower head produces 30 to 50 achenes. The barbed seeds stick to clothes and to fur of animals. Also dispersed by water.

#### Habitat:

Found in dry and in moist regions from lowlands to 4,000 feet. A serious weed in cultivated areas and along roadsides.

---

#### History:

Native to tropical America.

#### Note:

One of the most abundant weed pests in Hawaii.

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## COMPOSITAE (DAISY FAMILY)

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*Centaurea melitensis* L.

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### MALTESE THISTLE

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#### Description:

An erect annual herb, 1 to 2 feet high, branching in the upper portion, rough, hairy. **Stems** winged from base of leaves. When the plant is young, the portion above ground consists mainly of a rosette of leaves somewhat covered with short wool.

**Lower leaves** somewhat cut into lobes; **upper leaves** narrow and entire, with margins extending along sides of leafstalk and winged down the main stem. **Flower heads** yellow, 1/2 inch in diameter, not exposed much beyond the bracts, usually in solitary terminal heads but occasionally in clusters of several; involucre bracts stiff, each terminating in a spine, the largest about 1/4 inch long. **Fruit** an achene, small, light gray, with a small hook at one end and three rows of short, bristly hairs (20).

#### Propagation:

By seed. Dispersed by wind and water.

#### Habitat:

A weed in dry wastelands and cultivated areas.

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#### History:

Native to southern Europe.

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## COMPOSITAE (DAISY FAMILY)

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*Chrysanthemum Leucanthemum* L.

---

### OX-EYE DAISY

---

#### Description:

An erect, hairless perennial, 1/2 to 1-1/2 feet high. **Leaves** smooth, dark green; root-leaves long-petioled, spoon-shaped, pinnately divided, irregularly toothed; stem-leaves narrowly oblong, not stalked and clasping, also cut and toothed.

**Flower heads** white with yellow centers, borne on long slender stalks (3, 7, 16).

#### Propagation:

By seed. Hundreds of viable seeds are produced and easily scattered.

#### Habitat:

A weed in wastelands and upper pastures on the Island of Hawaii.

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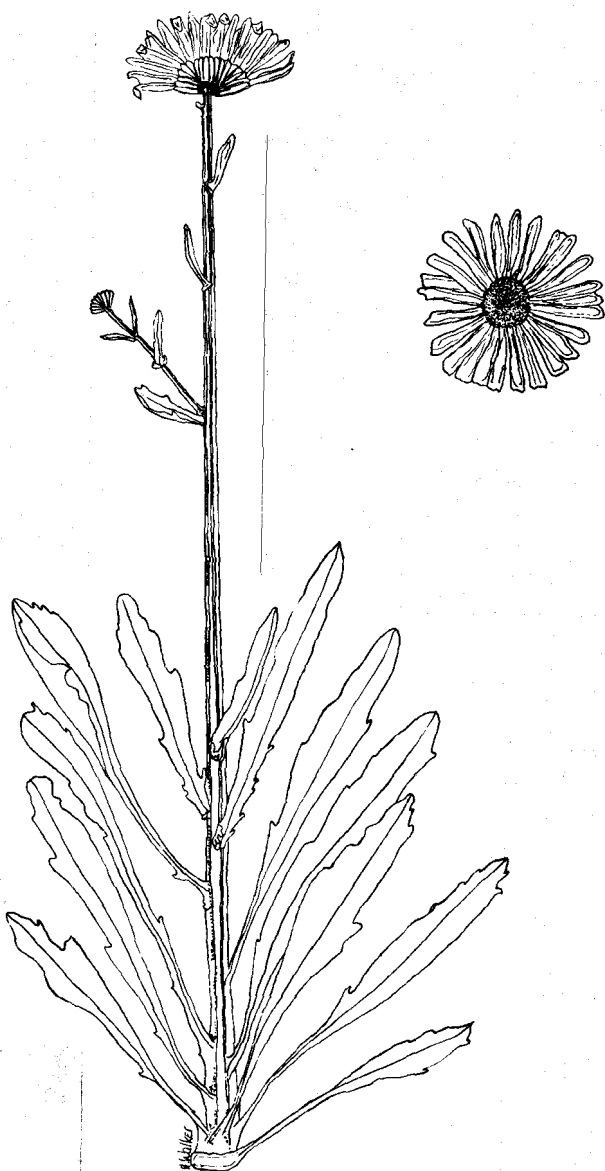
#### History:

Native to Europe.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Spreads rapidly, competing with forage plants for space, moisture, and nutrients.

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## COMPOSITAE (DAISY FAMILY)

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*Cirsium vulgare* (Savi) Tenore

Synonyms: *Carduus vulgaris* Savi; *Carduus lanceolatus* L., non *Cirsium lanceolatum* Hill

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### BULL THISTLE, SPEAR THISTLE

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#### Description:

A coarse, prickly biennial weed, 2 to 5 feet high, more or less branching. **Leaves** alternate, spiny, lobed, 3 to 6 inches long, woolly beneath. **Flower heads** dark purple, about 2 inches long and 2 inches wide, consisting of central florets only; involucre bracts with spines. **Fruit** with abundant, long, whitish, feathery ring of hairs at the top (15).

#### Propagation:

By seed and by root sections.

#### Habitat:

A weed in pastures, rangelands, and cultivated areas.

---

#### History:

Native to Europe. Of rather recent introduction to Hawaii.

#### Notes:

Has a deep taproot; flowers the second year. Spreads rapidly, forms dense stands, and crowds out forage plants.

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## COMPOSITAE (DAISY FAMILY)

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*Erigeron bonariensis* L.

Synonyms: *E. linifolium* Willd., *Conyza bonariensis* (L.) Cronq.

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### HAIRY HORSEWEED

---

#### Description:

A slender, upright plant, 4 to 8 feet high. **Stem** round in cross-section, covered with hairs, lower portion with leaf-scars; lower leaves on the stem dry, upper part of the plant spreading. **Leaves** narrowly lanceolate, green, lower ones with coarsely toothed margin, upper ones entire, hairy on both surfaces, attached to stem by a broad base. **Flower heads** white to cream, about 1/2 inch in diameter, contracted near the middle, confined to the upper part of the plant. **Fruit** 1/16 inch long, narrow, oblong, pale, tipped with stiff hairs and silky hairs which are 1/8 to 3/16 inch long (22).

#### Propagation:

By seed. Many thousands of seeds are dispersed by the wind.

#### Habitat:

Found in dry and in moderately moist regions. A weed in cultivated areas and waste places.

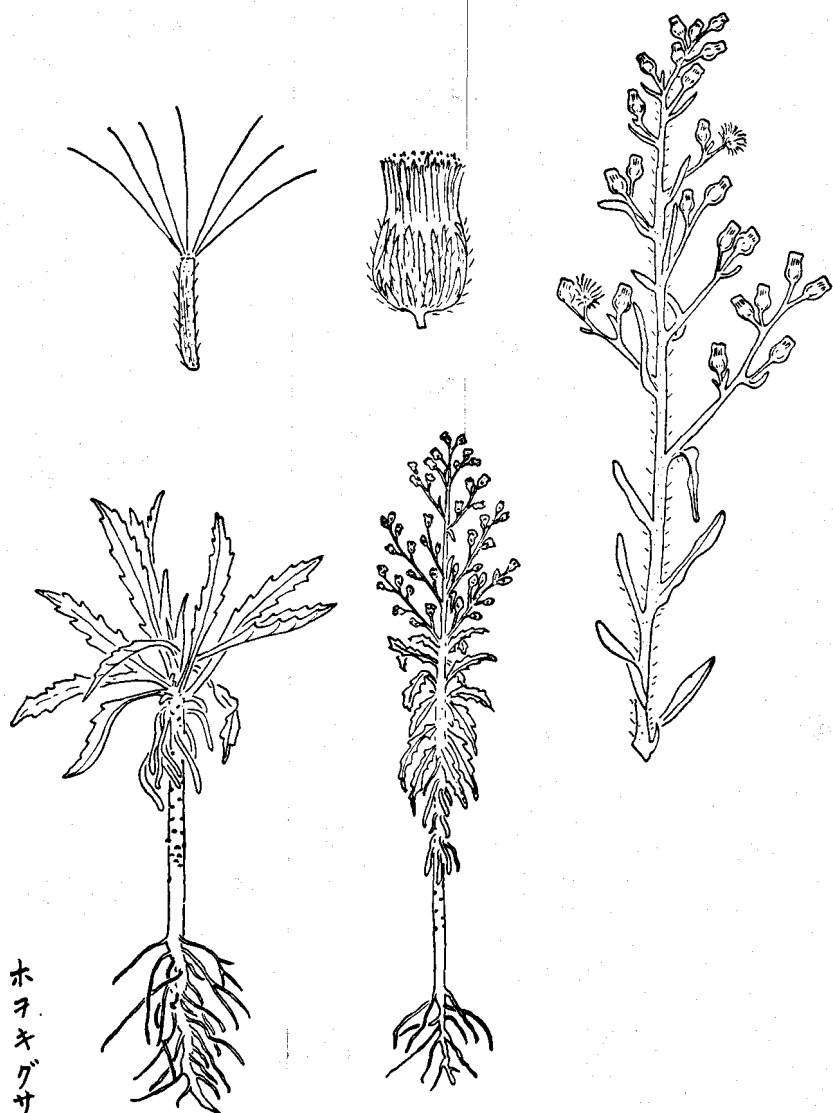
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#### History:

Native to tropical regions.

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## COMPOSITAE (DAISY FAMILY)

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*Eclipta alba* (L.) Hassk.

Synonyms: *E. prostrata* (L.) L., *Verbesina alba* L., *V. prostrata* L.

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### FALSE DAISY

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#### Description:

A branching annual, usually prostrate but sometimes having erect stems 6 to 12 inches or more high. **Stems** greenish or brownish, with short hairs. **Leaves** opposite, ovate to oblong, lanceolate and sometimes linear, 1 to 2 inches long, entire or sparingly serrate, sessile or with lower leaves sometimes on short leafstalks. **Flower heads** white, 1/4 to 1/2 inch across, solitary, on stalks of varying lengths from upper axils; corollas of the marginal florets small. **Seeds** 1/8 inch long, without a ring of hairs at the top (20).

#### Propagation:

By seed.

#### Habitat:

Found at lower elevations in moist regions -- along streams and in marshes. A weed in pastures, rangelands, and in cultivated areas.

---

#### History:

Found in many tropical and temperate regions. Introduced to Hawaii in 1888.

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## COMPOSITAE (DAISY FAMILY)

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*Elephantopus mollis* HBK.

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### ELEPHANTOPUS, ELEPHANTS-FOOT

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#### Description:

An erect herb, 12 to 50 inches high, somewhat woody. **Stem** green, covered with white, fine to coarse hair. **Leaves** firm, dull green, thinly hairy to rough above, soft-haired and resinous -- especially on veins beneath, oblong or oval, 2 to 6 inches long, 1 to 2-1/2 inches wide, serrate-edged, sharp pointed at the tip. **Flower heads** white to rarely pinkish, in clusters about 1/2 inch high, longer than the triangular hairy bracts. **Fruit** an achene, grayish-black, hairy, 1/8 inch long, with bristles in a triangular base (5).

#### Propagation:

By seed. Dispersed by wind and animals.

#### Habitat:

Found in moderate to high rainfall areas. At present reported on Kauai and in a localized area in Kealahou, Kona, Island of Hawaii.

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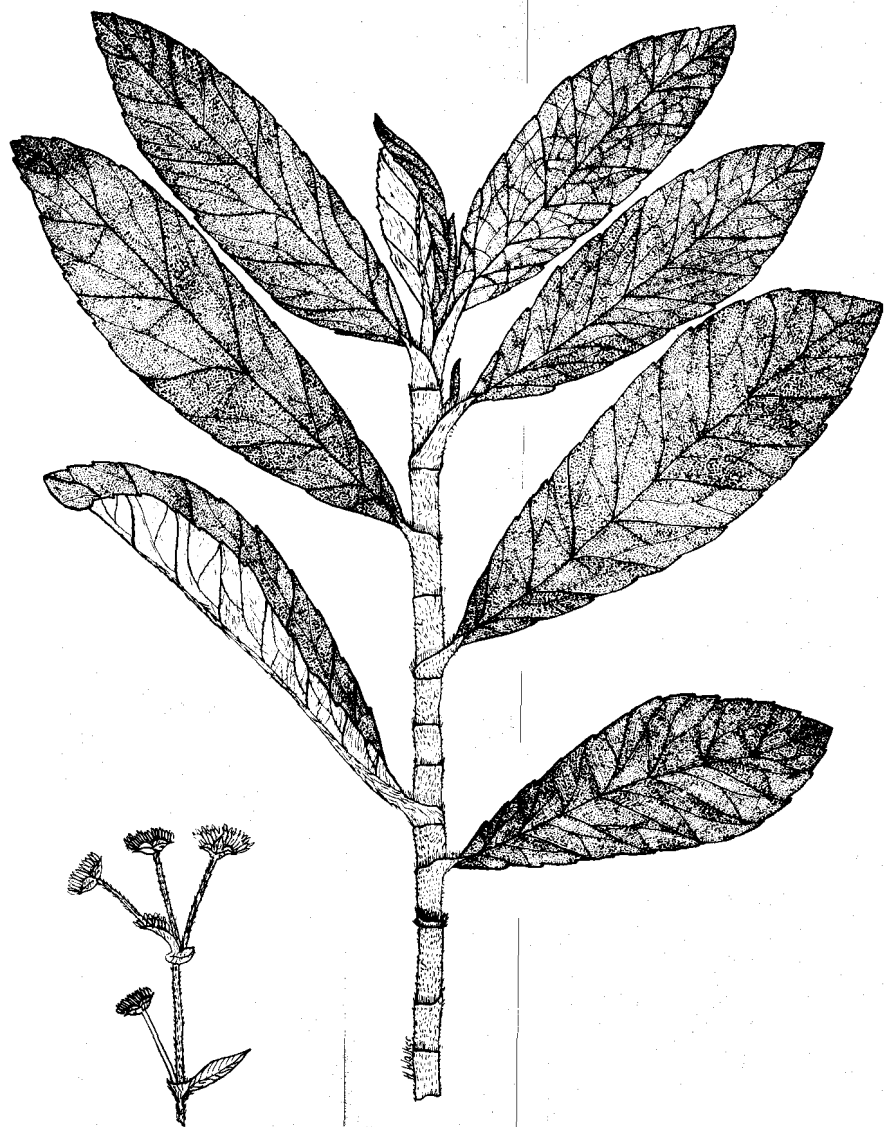
#### History:

Native to tropical America. Collected on Kauai in 1926.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. Spreads rapidly; covering valuable pastures, range-lands, and cultivated areas. Its long, stiff hairs cause itching when brushed against.

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## COMPOSITAE (DAISY FAMILY)

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*Emilia sonchifolia* (L.) DC.

Synonym: *Cacalia sonchifolia* L.

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### FLORAS PAINTBRUSH, RED PUALELE

---

#### Description:

An erect annual, 1 to 2 feet high; both stems and leaves somewhat hairy. **Leaves** lanceolate or ovate-lanceolate, clasping the stem, some lower leaves abruptly contracted into margined petioles, margins scalloped or bluntly toothed. **Flower heads** few at the tips of stalks, tassel-like, varying in color on different plants from orange to scarlet. **Seeds** long, narrow, each containing a bunch of soft white bristles at the top (20).

#### Propagation:

By seed. Dispersed by the wind.

#### Habitat:

Found in dry and in wet regions up to 1,000 feet or more. A weed in cultivated areas.

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#### History:

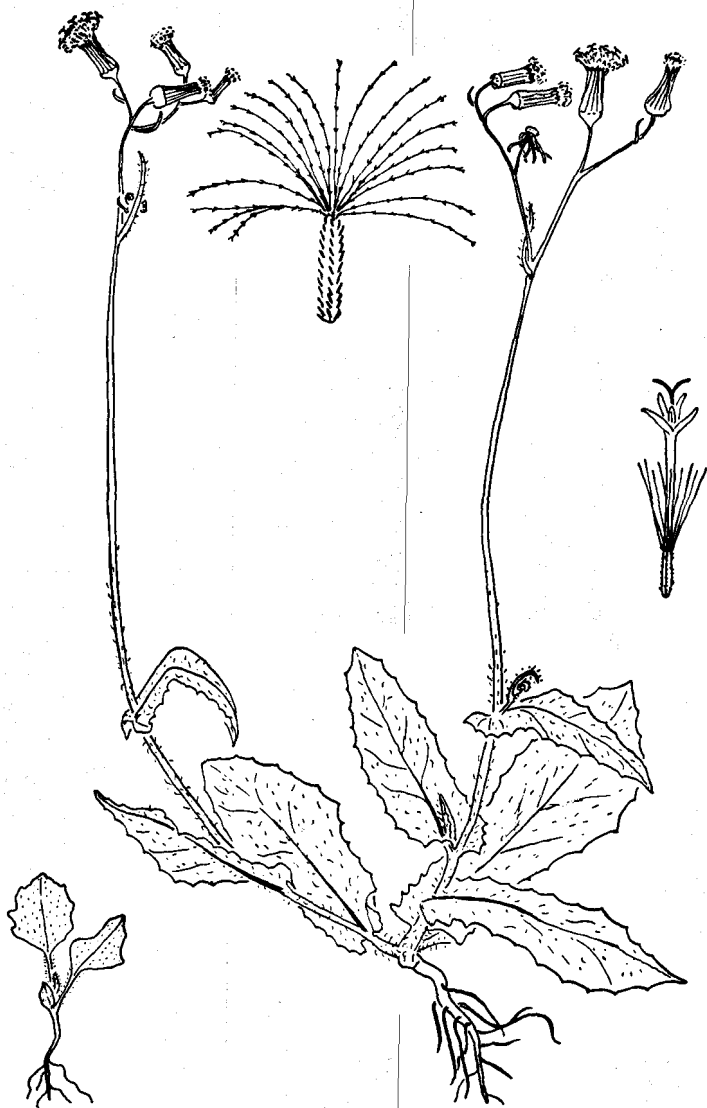
Native to the Old World tropics.

#### Note:

Sometimes cultivated as an ornamental.

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## COMPOSITAE (DAISY FAMILY)

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*Erechtites hieracifolia* (L.) Raf.

Synonym, *Senecio hieracifolia* L.

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### FIREWEED

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#### Description:

An erect annual, 2 to 6 feet high, smooth or nearly so; stems and branches marked with many small longitudinal ridges. **Leaves** thin, lanceolate or ovate-lanceolate, toothed and often deeply notched, 2 to 8 inches long; upper leaves sessile, bases often with ear-shaped appendages and clasping the stem; lower leaves usually narrowed into leafstalks. **Flower heads** greenish-white, arranged at the ends of stems and branches, 1/2 to 3/4 inch long, 1/4 inch in diameter, conspicuously swollen at base before flowering; bracts in one series, green and delicately ridged, reinforced at base with a series of short scales. **Seeds** linear-oblong, longitudinally ridged, with a white, spreading ring of hairs at the top (20).

#### Propagation:

By seed. Thousands of seeds produced by a single plant are dispersed by wind.

#### Habitat:

Found in wet regions. Abundant in cleared woodlands and waste places. One of the most abundant weeds in moist cultivated areas; also a weed in pastures and rangelands.

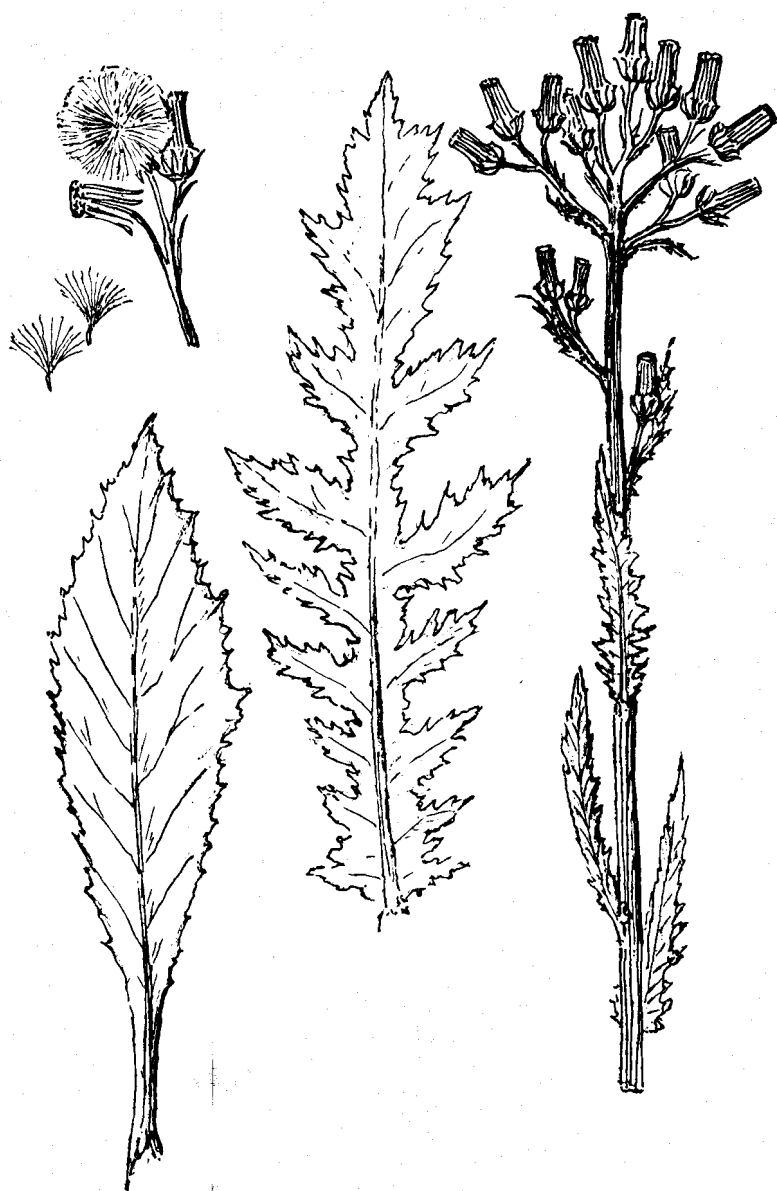
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#### History:

Native to North America.

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## COMPOSITAE (DAISY FAMILY)

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*Erigeron canadensis* L.

Synonyms: *Conyza canadensis* (L.) Cronq., *C. parva* Cronq.

---

### SMALL-LEAF HORSEWEED, CANADA FLEABANE

---

#### Description:

An erect annual, varying from a few inches to 5 or 6 feet at blossom time. **Stem** single up to the flower branches, densely clothed with erect leaves -- the lower ones dying but remaining attached and hanging downward. **Leaves** linear-lanceolate, 2 to 4 inches long, the lower ones toothed or entire, tapering into a short petiole. **Inflorescence** a spreading, leafy panicle bearing numerous small cylindrical heads with inconspicuous white florets, each head supported on a short stalk. **Seeds** small, flat, each with a tuft of bristly hairs (20).

#### Propagation:

By seed. A single plant produces thousands of seeds which are dispersed by the wind.

#### Habitat:

Found in dry and in wet regions. A common weed in cultivated areas.

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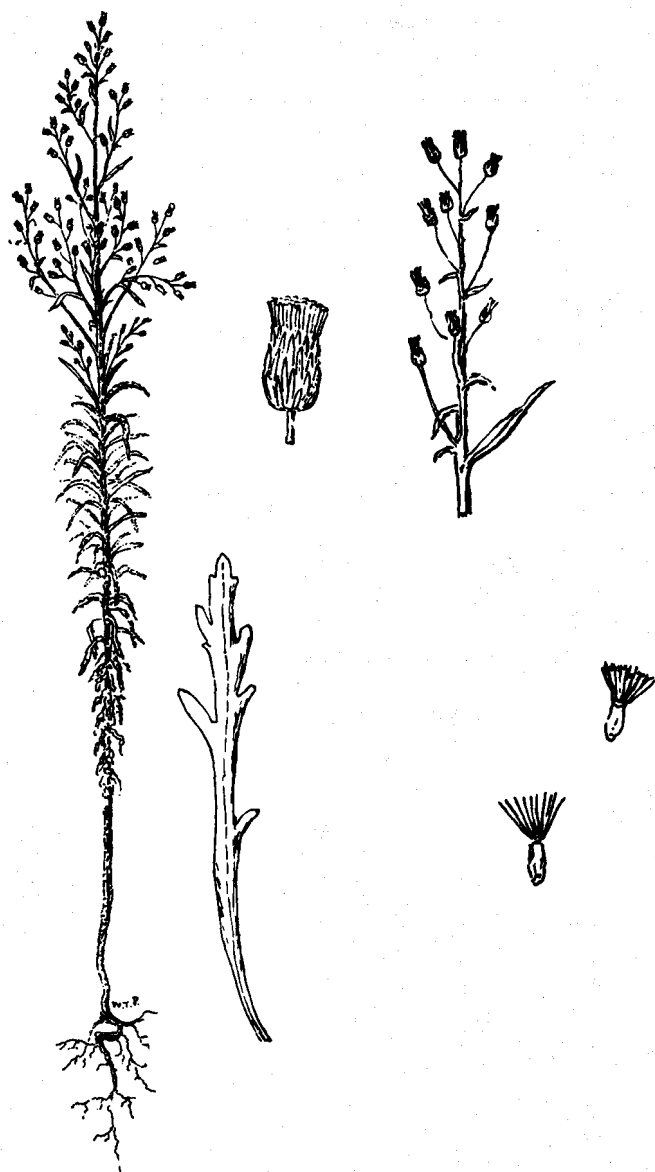
#### History:

Native to temperate North America. Now a naturalized weed in Hawaii.

#### Note:

Leaves have a slight aromatic odor.

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## COMPOSITAE (DAISY FAMILY)

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*Eupatorium adenophorum* Spreng.

Synonym: *E. glandulosum* HBK.

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### MAUI PAMAKANI

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#### Description:

An erect, branching perennial, up to 10 feet high. **Stems** tough, reddish-brown. **Leaves** opposite, petioled, ovate, 2 to 6 inches long, end in a sharp point, obtuse at the base, margin regularly toothed with blunt points. **Inflorescence** a terminal axis divided into a number of branches bearing bunches of composite flower heads, the main portion of which is white in color. **Seeds** small, slim, with a bunch of hairs at the top (20).

#### Propagation:

By seed and by branched underground stems. Underground stems become separated and a new plant develops from each part.

#### Habitat:

Found in moist to wet regions from sea level to 7,000 feet. A weed in pastures, rangelands, and along roadsides.

---

#### History:

Native to Mexico. Introduced to Hawaii about 1900.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. A fast-growing shrub that forms impenetrable thickets up to 10 feet high. Of no forage value; may be poisonous to livestock.

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## COMPOSITAE (DAISY FAMILY)

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*Eupatorium riparium* Regel

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### HAMAKUA PAMAKANI

---

#### Description:

A freely branching shrub, 3 to 5 feet high, becoming woody at base. **Stems** slender, usually reddish, with fine hairs. **Leaves** opposite, 2 to 4 inches long, long-lanceolate, taper-pointed and at base narrowed to a long petiole, prominently 3-ribbed, toothed. **Flower heads** white, small, in compact clusters at ends of long stalks. **Seeds** with long, silky hairs (3, 16).

#### Propagation:

By seed.

#### Habitat:

Found in moist to wet regions. A weed in pastures, rangelands, and along roadsides.

---

#### History:

Native to Mexico. Accidentally introduced to Hawaii about 1925.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10 and for State land leases. A prolific seeder which grows fast, dominating all other vegetation in the invaded area. Of no forage value.

---



## COMPOSITAE (DAISY FAMILY)

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*Franseria strigulosa* Rydb.

Misdetermined as *F. tenuifolia* (Spreng) Gray

---

### FALSE RAGWEED

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#### Description:

An erect, branching, hairy, aromatic perennial, 1 to 2 feet high. **Leaves** alternate above, opposite below, variable in form, from narrow and undivided to broad and one to three times pinnately cut, 4 to 10 inches long. **Flower heads** yellowish-green, tiny, inconspicuous, of one sex only; male heads nodding and arranged in narrow spikes 1 to 6 inches long at branch tips; female heads of one flower each, clustered at axils of upper leaves. **Fruit** small, ovoid, solitary, burlike, with about 15 hooked spines arranged in several rows (15).

#### Propagation:

By seed.

#### Habitat:

A weed pest in pastures, wastelands, and along roadsides.

---

#### History:

Native to western California and Mexico. First observed in Hawaii in 1854.

#### Notes:

Declared **noxious** in Regulation 2. A cause of hay fever.

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## COMPOSITAE (DAISY FAMILY)

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*Gaillardia pulchella* Foug.

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### GAILLARDIA

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#### Description:

An upright annual herb, 6 to 15 inches high. **Leaves** lanceolate, oblong, entire or toothed, all but the lower sessile. **Flower heads** 1 to 2 inches across, on long stalks; involucre bracts lanceolate, covered with short soft hairs; marginal florets 10 to 20, red or purple at base, yellow above; central florets small. **Seeds** wedge-shaped, with a few short bristles around the top (20).

#### Propagation:

By seed.

#### Habitat:

A common weed in cultivated areas, pastures, wastelands, and along roadsides.

---

#### History:

Native to the western U.S. Mainland. May have been introduced to Hawaii as an ornamental.

#### Note:

Of no forage value.



## COMPOSITAE (DAISY FAMILY)

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*Galinsoga parviflora* Cav.

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### GALINSOGA

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#### Description:

An annual branching herb, 1 to 2 feet high, often spreading and with many slender, upright branches. **Stem** weak, lower portion smooth, upper young portion clothed with hairs. **Leaves** opposite, ovate, thin, 3-veined, margins slightly scalloped. **Flower heads** terminal and axillary, about 1/4 inch in diameter, broad; marginal florets usually 5, with small white petals; central florets smaller, yellow. **Fruit** an achene, small, dark, wedge-shaped, finely hairy (20, 22).

#### Propagation:

By seed.

#### Habitat:

Found in wet regions up to 3,000 feet. A weed in cultivated areas and along roadsides

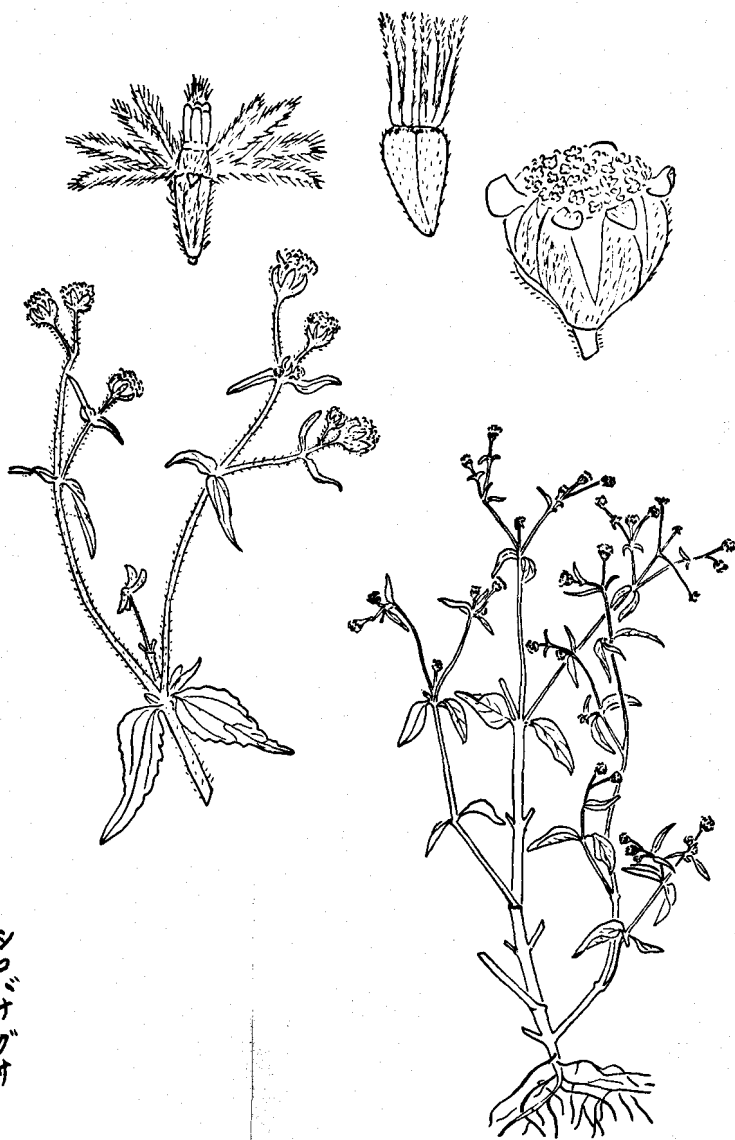
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#### History:

Native to tropical America.

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## COMPOSITAE (DAISY FAMILY)

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*Heterotheca grandiflora* Nutt.

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### TELEGRAPH PLANT

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#### Description:

An erect, slender plant, 1 to 6 feet high, branching above, with shaggy, gray hairs. **Stem** round in cross-section, covered with soft silky hairs. **Leaves** 2 to 3 inches long, 1/4 to 1 inch wide, alternate, densely hairy on both surfaces, margin slightly toothed, lower leaves long-stalked, upper ones stemless. **Flower heads** yellow, borne in flat-topped cluster; each head 1/2 to 3/4 inch across, marginal florets many; bracts or scales around the head narrow, arranged in several series, clothed with glandular hairs. **Fruit** 1/8 to 3/16 inch long, slightly broadened in the middle, covered with silky hairs, and ending in a tuft of white hairs 1/4 inch long (22).

#### Propagation:

By seed.

#### Habitat:

Found in moderately moist regions. A weed in pastures, range-lands, and cultivated areas.

---

#### History:

Native to California.

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## COMPOSITAE (DAISY FAMILY)

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*Hypochoeris radicata* L.

Synonym: *Crepis molokaiensis* Lévl.

---

### HAIRY CATS-EAR

---

#### Description:

A slender, erect, branching plant, 1 to 2-1/2 feet high. **Stem** slender, smooth, almost free of leaves. **Leaves** clustered at the base of the plant, 3 to 5 inches long, 1/4 to 1/2 inch wide, paddle-shaped, on long leafstalk, covered with hairs on both surfaces, margin smooth, mid-rib prominent. **Flower heads** yellow, 3/4 to 1 inch across, on branching, leafless stalks; each flower with a narrow, pointed, chaffy scale at its base; heads enclosed by scales about 1/2 inch long, the outer ones short, inner bracts longer, sparsely clothed with hairs. **Fruit** 1/4 inch long, rough, with slender neck; chaff or fruit-scale as long as the fruit and its bristles.

#### Propagation:

By seed.

#### Habitat:

Found in wet regions.

---

#### History:

Native to the Mediterranean region.

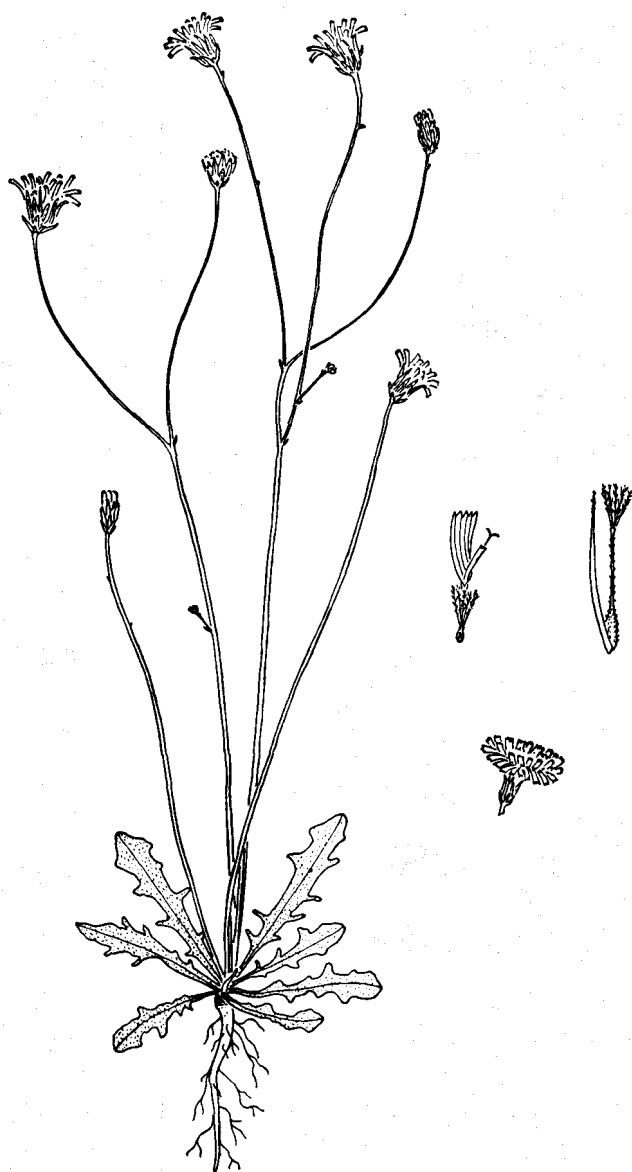
#### Note:

Has a deep taproot.

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## COMPOSITAE (DAISY FAMILY)

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*Montanoa hibiscifolia* (Benth.) C. Koch

Synonym: *Montagnea hibiscifolia* Benth.

---

### MONTANOA, TREE DAISY

---

#### Description:

A shrub, up to 20 feet high. **Stems** with a soft, spongy center.

**Leaves** opposite, more or less downy, toothed, narrow, small, unlobed; or rounded to ovate, 4 to 10 inches wide, with about five broad, pointed, palmate lobes, commonly with two small lobes at the base. **Flower heads** many, develop in large

panicles; each head 1 inch wide; marginal florets white or rose-tinted, oval, large, eight in number; central florets yellow, many, tiny. **Fruit** tiny, red-brown, bare, enclosed by a yellowish bract (15).

#### Propagation:

By seed and vegetative means. Dispersed by wind, water, and man.

#### Habitat:

Found at low to middle elevations.

---

#### History:

Native to South America. Introduced to Hawaii as an ornamental.

#### Notes:

Declared **noxious** in Regulation NW 10. Of no forage value.

Forms a dense covering, preventing growth of forage plants.

---



## COMPOSITAE (DAISY FAMILY)

---

*Picris Hieracioides* L.

---

### HAWKWEED

---

#### Description:

A biennial, 1 to 3 feet or more high, covered with harsh hooked hairs. **Leaves** alternate, narrow, rough, toothed or nearly entire, to 6 inches long, narrowed into a short stem or stemless. **Flower heads** yellow, many, 1/2 to 1 inch across; marginal florets about 20, with broad 5-toothed tips; involucre cup-shaped, 1/2 inch high, with two to three series of narrow bracts. **Fruit** an achene, with a whitish feathery ring of hairs at the top (15).

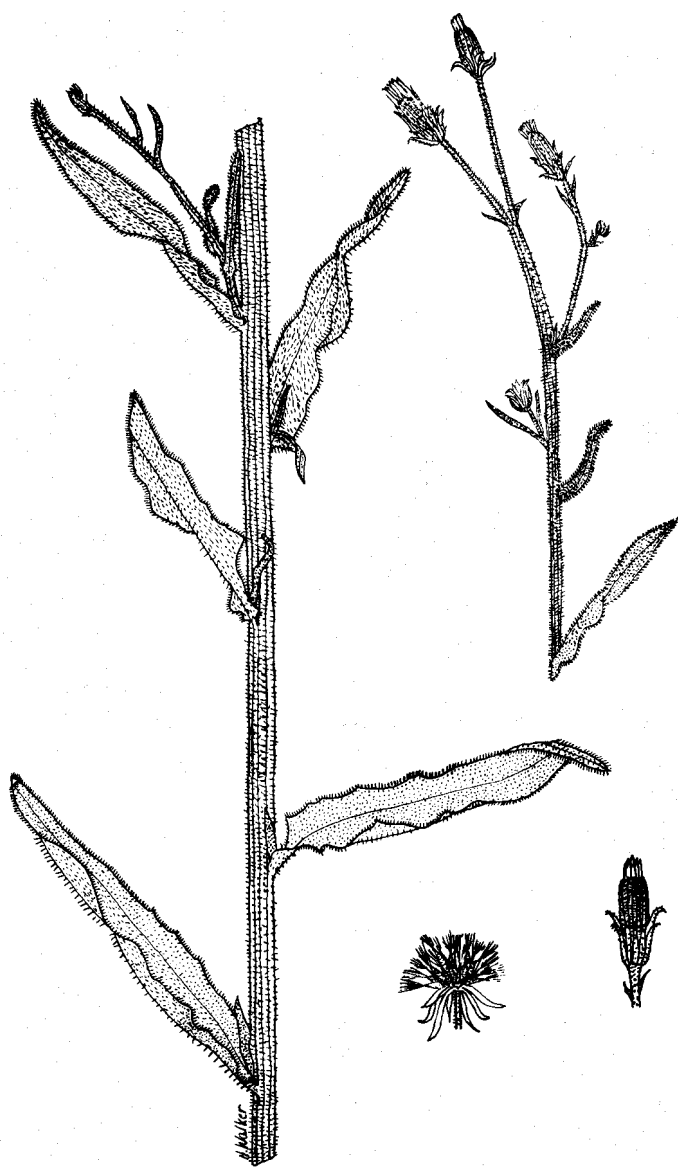
#### Propagation:

By seed.

---

#### History:

Native to Eurasia. Of recent introduction to Hawaii. At present found on the Island of Hawaii.



## COMPOSITAE (DAISY FAMILY)

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*Pluchea indica* (L.) Less.

Synonym: *Baccharis indica* L.

---

### INDIAN FLEABANE

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#### Description:

A shrub, 2 to 6 feet high. **Stems** cylindrical, woody and dark colored below; younger branches green. **Leaves** alternate, oblong to oval with rounded ends, tapering into leafstalk, margin serrate. **Flower heads** purplish, numerous, in terminal and axillary clusters. **Fruit** an achene, with a single whorl of silky white hairs (20).

#### Propagation:

By seed. Dispersed by the wind.

#### Habitat:

Found along the coast in salt marshes and in coral fills and plains. A weed in wastelands, pastures, and rangelands.

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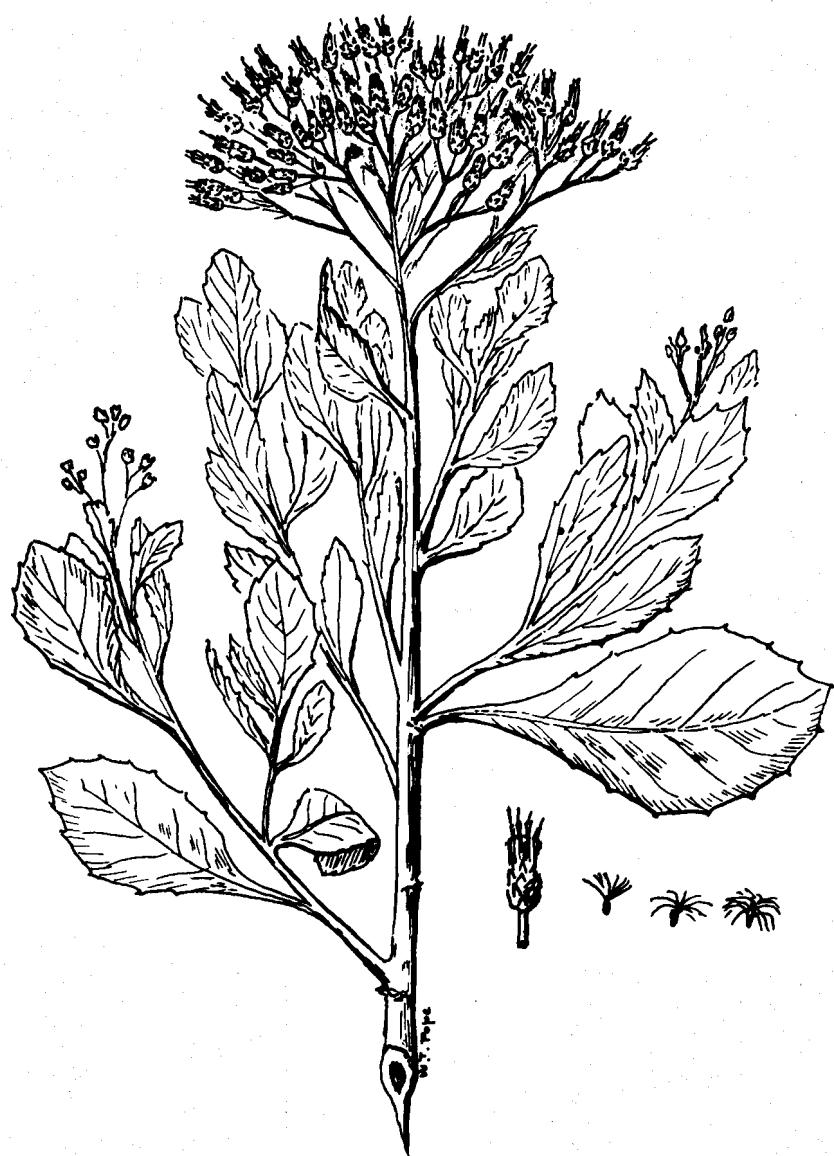
#### History:

Native to southeastern Asia. Accidentally introduced to Hawaii.

#### Notes:

Grows fast. Of no forage value.

---



## COMPOSITAE (DAISY FAMILY)

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*Pseudo-elephantopus spicatus* (Juss. ex Aubl.) Gleason

Synonym: *Elephantopus spicatus* Juss. ex Aubl.

---

### SPIKE ELEPHANTOPUS, FALSE ELEPHANTS-FOOT

---

#### Description:

An erect, woody herb, 6 to 24 inches high and slightly downy.

**Leaves** more or less linear, tip obtuse, margins wavy, covered with rather long hairs, khaki-green in color, 3/4 to 3 inches long, 1/4 to 3/4 inch wide. **Flower heads** white, small, arranged in long, narrow spikes; involucre bracts narrowly lanceolate.

**Fruit** an achene, slightly covered with hairs, about 1/4 inch long (18).

#### Propagation:

By seed.

#### Habitat:

A weed in pastures, rangelands, and cultivated areas.

---

#### History:

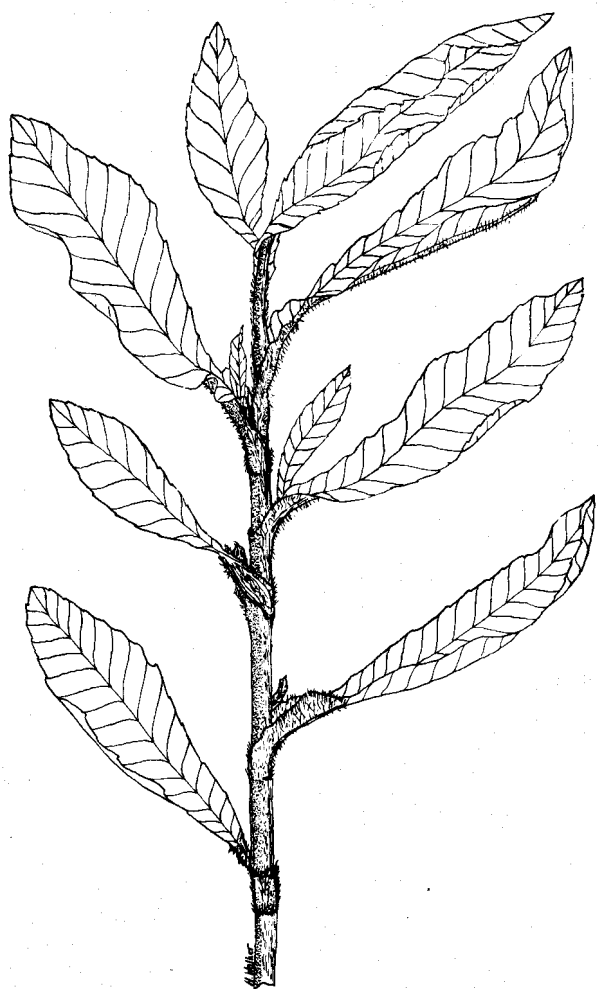
Native to tropical America. Of recent introduction to Hawaii.

#### Notes:

Declared **noxious** in Regulation 2. Spreads rapidly and crowds out desirable forage.

---





## COMPOSITAE (DAISY FAMILY)

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*Reichardia picroides* (L.) Roth

Synonyms: *Scorzonera Picroides* L., *S. tingitana* L., *Picridium tingitanum* (L.) Roth, *P. vulgaris* Desf.

---

### PICRIDIMUM

---

#### Description:

A smooth annual, 1/2 to 1 foot high; young plant rosette-shaped; mature plant with a branching, solid stalk. **Young leaves** narrow, entire to toothed or much lobed; **mature leaves** alternate. **Flower heads** yellow, to 1-1/2 inches across (15).

#### Propagation:

By seed.

#### Habitat:

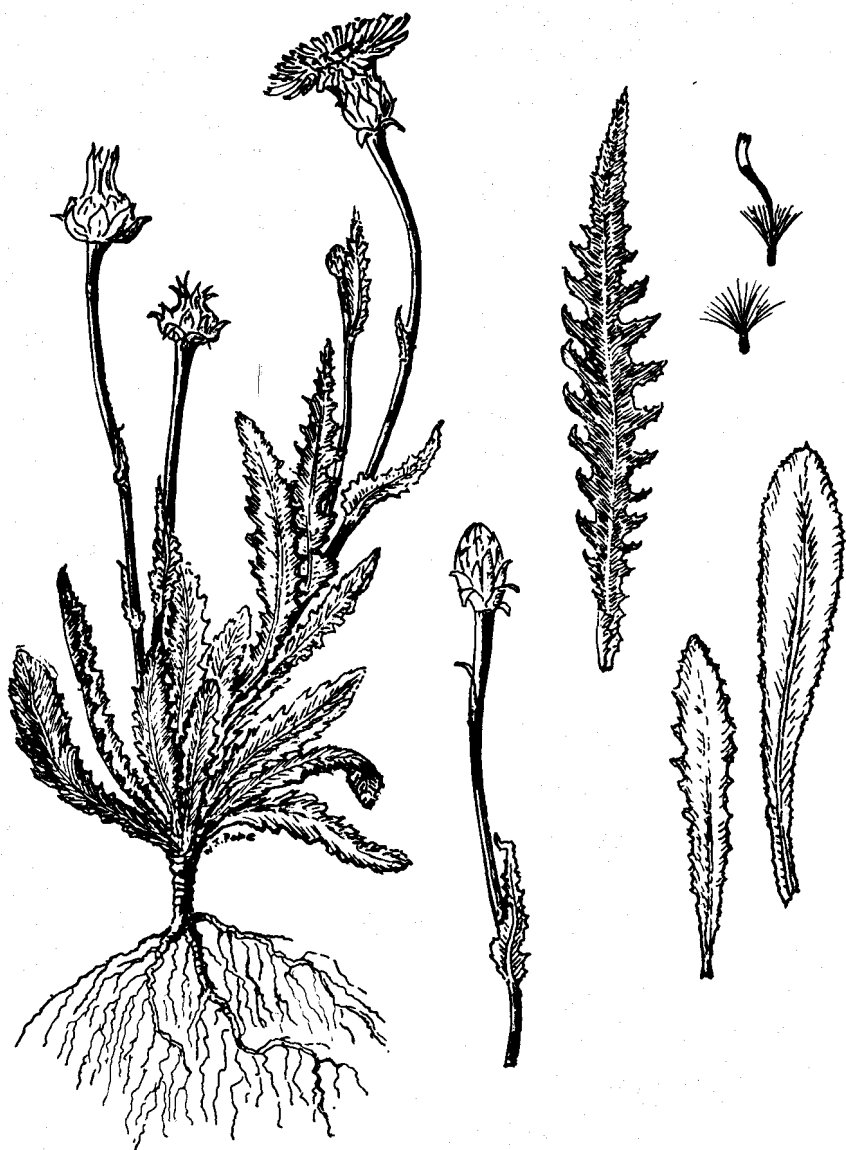
A common weed on beaches, in cultivated areas, and in waste-lands.

---

#### History:

Native from the Canary Islands eastward to India.

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## COMPOSITAE (DAISY FAMILY)

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*Senecio mikanioides* Otto ex Walp.

---

### GERMAN IVY

---

#### Description:

A smooth, tall-climbing vine. **Leaves** ovate to triangular, commonly indented at the base, 5- to 7-angled or lobed, 2 to 4 inches wide. **Flower heads** yellow, small, close-clustered (15).

#### Propagation:

By seed and cuttings.

#### Habitat:

At present found on the Island of Hawaii. A weed in higher rangelands in Kamuela and Kona.

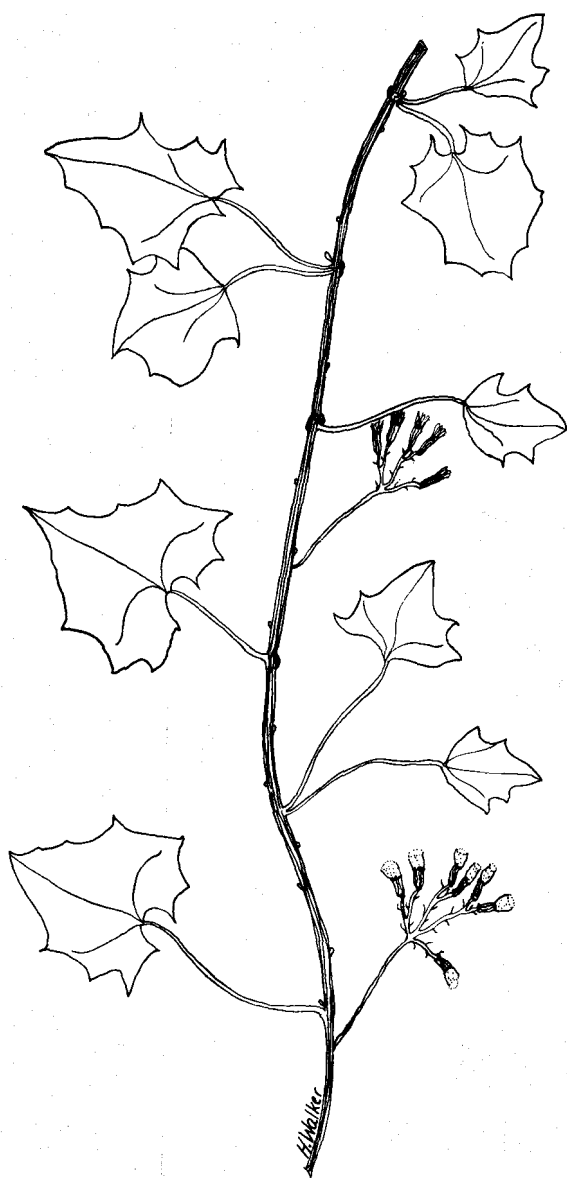
---

#### History:

Native to South Africa.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Forms a dense mat over the ground, preventing growth of forage plants.



## COMPOSITAE (DAISY FAMILY)

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*Siegesbeckia orientalis* L.

---

### SMALL YELLOW CROWN-BEARD

---

#### Description:

A stiff branching annual, 1 to 2 feet high. **Leaves** broadly ovate, triangular to lanceolate, 2 to 4 inches long on leaf-stalks of variable lengths. **Flower heads** yellow, terminate the branches of leafy panicles, petals 5, small, fall away very soon after they expand. **Seeds** about 10, usually curved, without a ring of hairs at the top; bracts 5, spoon-shaped, radiating from the base of the small head of seeds, and dotted with little stiff hairs (20).

#### Propagation:

By seed.

#### Habitat:

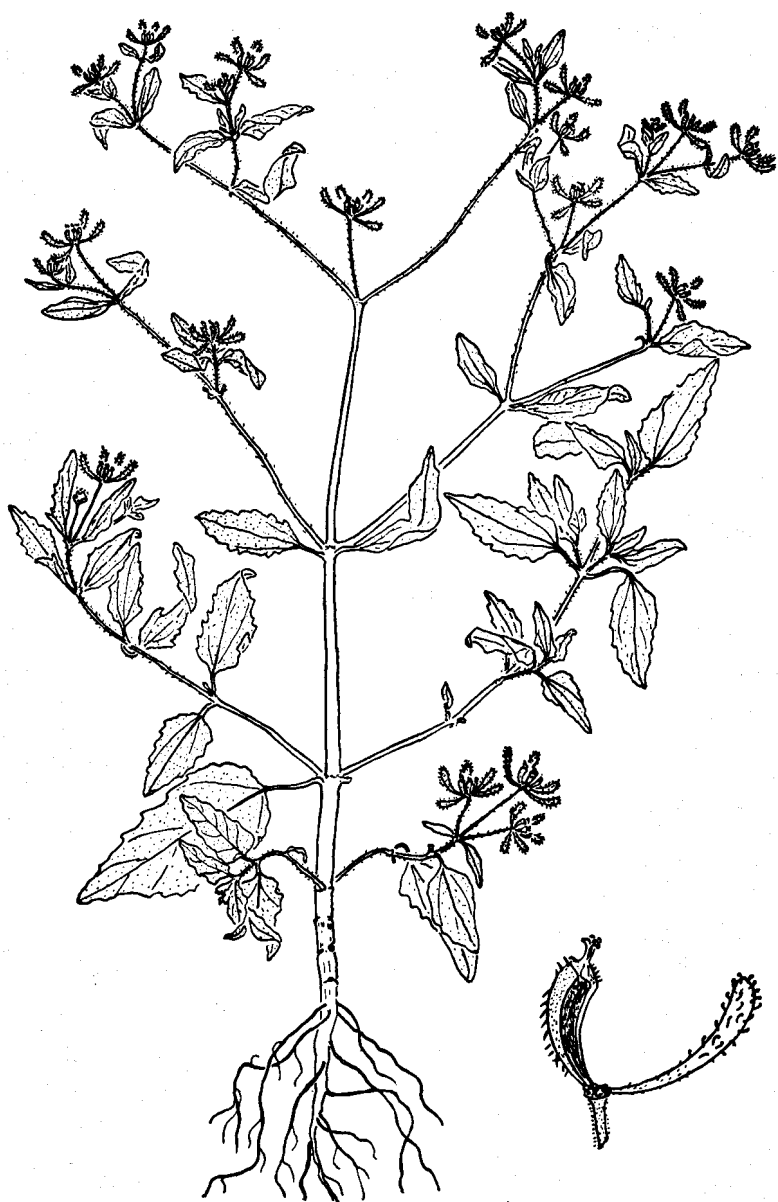
Found in wet regions. A weed in cultivated areas.

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#### History:

Native to eastern Asia.

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## COMPOSITAE (DAISY FAMILY)

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*Sonchus oleraceus* L.

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### PUALELE, SOW THISTLE

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#### Description:

An erect annual, 1 to 3 feet high. **Stems** angular, hollow between nodes, with a milky juice. **Leaves** toothed; lower leaves petioled, commonly with angular terminal segments; uppermost leaves narrow, lanceolate, with the base clasping the stem. **Flower heads** pale yellow, borne in short, more or less flat-topped panicles, each head nearly 1 inch across. **Seeds** tipped with a tuft of white silken hairs (20).

#### Propagation:

By seed and underground stems. Dispersed by the wind.

#### Habitat:

Found in dry and in wet regions from lowlands to high elevations (summit of Haleakala). A weed in cultivated areas.

---

#### History:

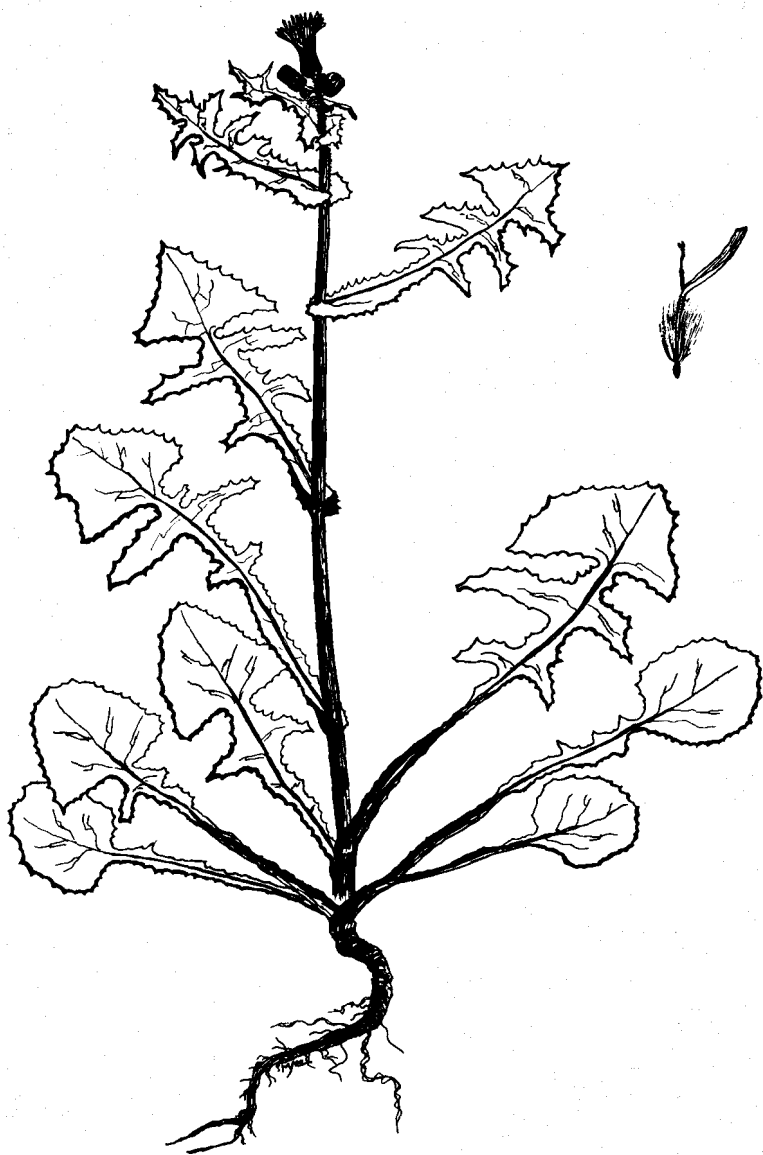
Native to Europe. Of early introduction to Hawaii.

#### Note:

Eaten as forage by livestock.

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## COMPOSITAE (DAISY FAMILY)

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*Synedrella nodiflora* (L.) Gaertn.

Synonym: *Bidens nodiflora* L.

---

### SYNEDRELLA, NODEWEED

---

#### Description:

An upright branching, or sometimes prostrate, annual herb.

**Stems** more or less covered with hairs, sometimes smooth.

**Leaves** opposite, larger leaves usually at the top, ovate, serrate, 3-veined, with a pointed tip, and on leafstalks.

**Flower heads** yellow, small, 3/8 to 1/2 inch long, 1/4 inch across, sessile, axillary and terminal; involucre bracts lanceolate, nearly as long as corolla. **Seeds** with two or three small, spreading awns (20).

#### Propagation:

By seed.

#### Habitat:

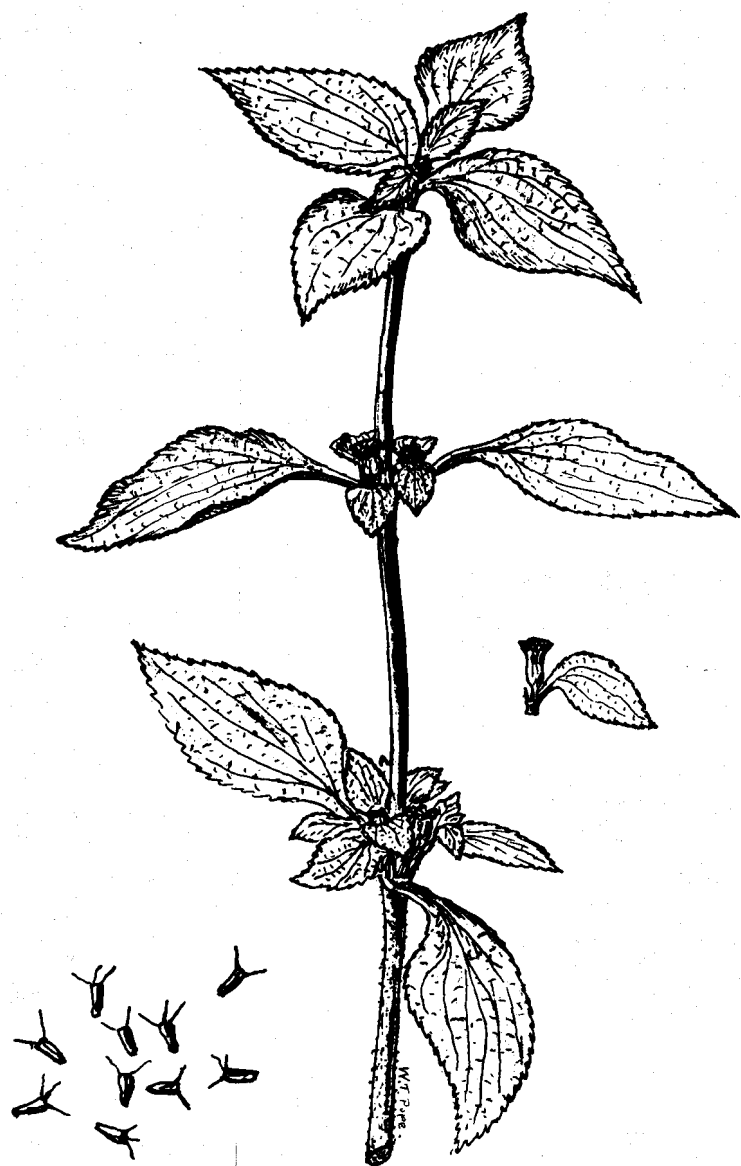
A common weed in cultivated areas and lawns.

---

#### History:

Native to tropical America.

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## COMPOSITAE (DAISY FAMILY)

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*Tagetes minuta* L.

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### WILD MARIGOLD, STINKWEED

---

#### Description:

An erect annual herb, leafy, foul-smelling, 12 to 25 inches high.

**Leaves** pinnate, mostly alternate, 2 to 6 inches long, with the odor glands in a single row on each side and at the base of the teeth; leaflets 11 to 17, linear-lanceolate, sharply serrate, 1 to 2-1/2 inches long. **Flower heads** lemon-yellow, small, abundant, short-stemmed, tubular, about 3/8 inch long, 1/8 inch wide; bracts 5; marginal florets about 3; central florets 4 to 5, with corolla 1/4 inch long, somewhat hairy, with tube shorter than trumpet-shaped throat. **Fruit** an achene, 1/4 inch long, with stiff hair, linear, black, sharply pointed with a top of 5 to 6 bristles, one being longer than the rest (5).

#### Propagation:

By seed. Dispersed by wind and water.

#### Habitat:

Found in semi-dry regions at high elevations. At present reported only on the Island of Hawaii, where it is a weed in pastures, rangelands, and waste areas.

---

#### History:

Native to South America. First collected at Puu Hanai, Parker Ranch, on the Island of Hawaii in 1932.

#### Notes:

Declared **noxious** in Regulations 2 and NW 10. Grows fast. Of no forage value. Has a pungent odor and irritating properties.

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## COMPOSITAE (DAISY FAMILY)

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*Taraxacum officinale* (L.) Weber in Wiggers

Synonym: *Leontodon Taraxacum* L.

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### DANDELION

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#### Description:

A perennial, stemless herb with a milky juice throughout and a deep-reaching taproot, the crown of which supports a whorl of leaves and flower stalks. **Leaves** 4 to 10 inches long, narrow, deeply and irregularly lobed. **Flower heads** bright yellow, at the end of hollow stems 1 to 8 inches long. **Seeds** oblong, dry, 4- or 5-angled, each retaining a long beak which is crowned with a ring of numerous, unequal, white, persistent bristles (20).

#### Propagation:

By seed. Dispersed by the wind.

#### Habitat:

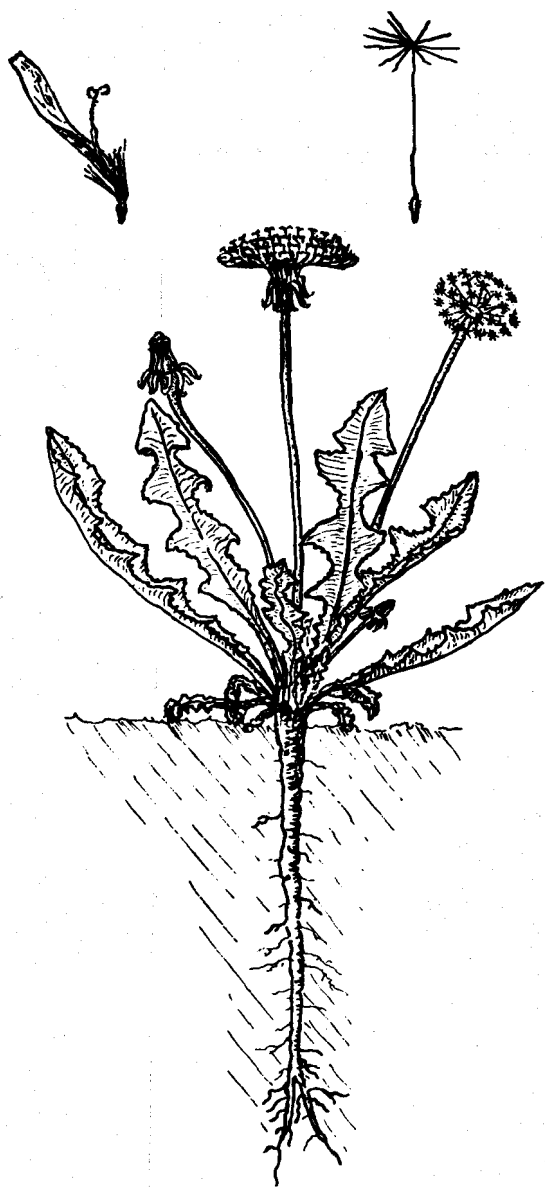
Found in moderately moist regions from 1,000 to 4,000 feet. A weed in lawns, pastures, and cultivated areas.

---

#### History:

Native to Europe.

---



## COMPOSITAE (DAISY FAMILY)

---

*Tithonia diversifolia* (Hemsl.) Gray

Synonym: *Mirasolia diversifolia* Hemsl.

---

### TREE MARIGOLD

---

#### Description:

A perennial, clump-forming shrub, 6 to 8 feet high. **Stems** dark green, 4-angled, with fine lines or ridges, lower parts covered with hairs. **Leaves** alternate, obovate, deeply 3- to 5-lobed, toothed, pointed, thin, 4 to 8 inches long, hairy below, tapering into winged stems. **Flower heads** orange-yellow, about 4 inches across, borne on stalks 3 to 6 inches long. **Fruit** an achene, compressed, about 1/4 inch long, awned (15, 18).

#### Propagation:

By seed.

#### Habitat:

A weed in lawns and wastelands.

---

#### History:

Native to Mexico and Central America. Introduced as an ornamental to Hawaii.

---





## COMPOSITAE (DAISY FAMILY)

---

*Vernonia cinerea* (L.) Less.

Synonym: *Conyza cinerea* L.

---

### LITTLE IRONWEED

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#### Description:

An erect annual, 1 to 2-1/2 feet high; stems and leaves covered with fine hairs. **Lower leaves** broadly lanceolate, with prominent leafstalk and entire margin; smaller leaves narrow, with irregularly toothed margins. **Flower heads** purplish or bluish, small, on slender stalks, together forming a terminal, leafless, more or less flat-topped panicle; involucre forms a cup-shaped container about the seeds.

**Fruit** an achene, small, with a whitish ring of hairs at the top (20).

#### Propagation:

By seed. Dispersed by wind.

#### Habitat:

Found in dry and in moderately wet places. A weed in cultivated areas.

---

#### History:

Native to tropical Africa and from Asia to Australia.

Accidentally introduced to Hawaii from China prior to 1875.

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## COMPOSITAE (DAISY FAMILY)

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*Xanthium saccharatum* Wallr.

Synonyms: *X. strumarium* L.; *X. pennsylvanicum* sensu Deg., non Wallr.

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### COCKLEBUR, KIKANIA

---

#### Description:

A coarse annual weed, 1 to 8 feet high, branched and sometimes widely spreading. **Stems** tough, angular, often reddish and spotted with dark brown. **Leaves** alternate, large, broadly oval or heart-shaped, sometimes 3-lobed, strongly veined, rough on both surfaces, with more or less toothed margins, on rigid leafstalks. **Flower cluster** greenish, contains heads of two sorts; male flowers inconspicuous at branch tips; female heads at leaf axils are ovoid, closed, 2-flowered, spiny. **Fruit** a bur, about 1 inch long, 2-seeded, covered with hooked bristles, each bur terminated by a pair of stout hooked spines (15, 20).

#### Propagation:

By seed. Dispersed by water and animals.

#### Habitat:

A weed in cultivated areas, pastures, rangelands, and waste places.

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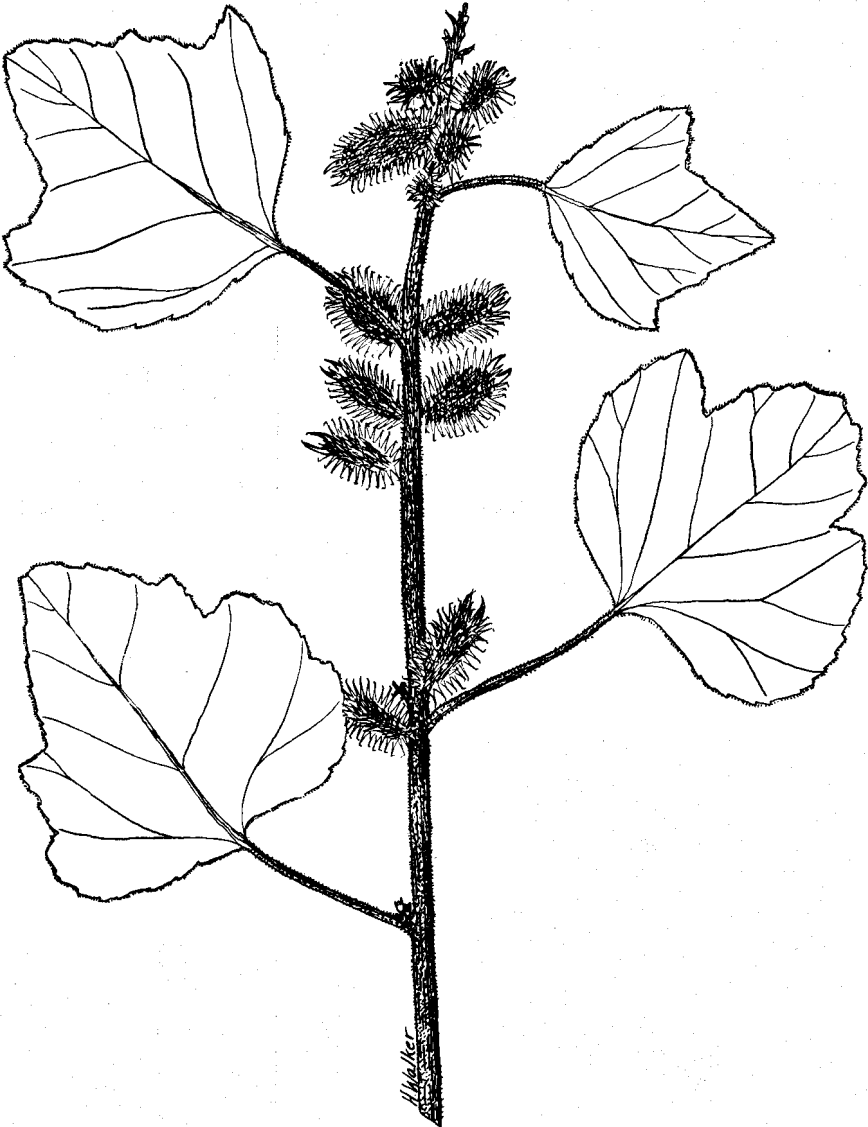
#### History:

Native to Old World tropics.

#### Notes:

Declared **noxious** in Regulation 2. Plants, especially seedlings, poisonous to livestock.

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## COMPOSITAE (DAISY FAMILY)

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*Youngia japonica* (L.) DC.

Synonyms: *Crepis japonica* (L.) Benth; *Prenanthes japonica* L.

---

### ASIATIC HAWKSBEARD

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#### Description:

An erect, slender annual, 1/2 to 2 feet high. **Stems** smooth, hollow, with a milky sap. **Leaves** mostly at base of stem, 1 to 4 inches long, nearly entire or lobed, margin somewhat toothed. **Flower heads** numerous, on a slender panicle which is sometimes almost umbellate; each flower about 5/8 inch across, with 10 to 20 small yellow florets which open only during the bright, sunny part of a single day, after which they close and become yellowish-red for several days until dry. **Seeds** topped with a soft white ring of hairs (20).

#### Propagation:

By seed. Dispersed by the wind.

#### Habitat:

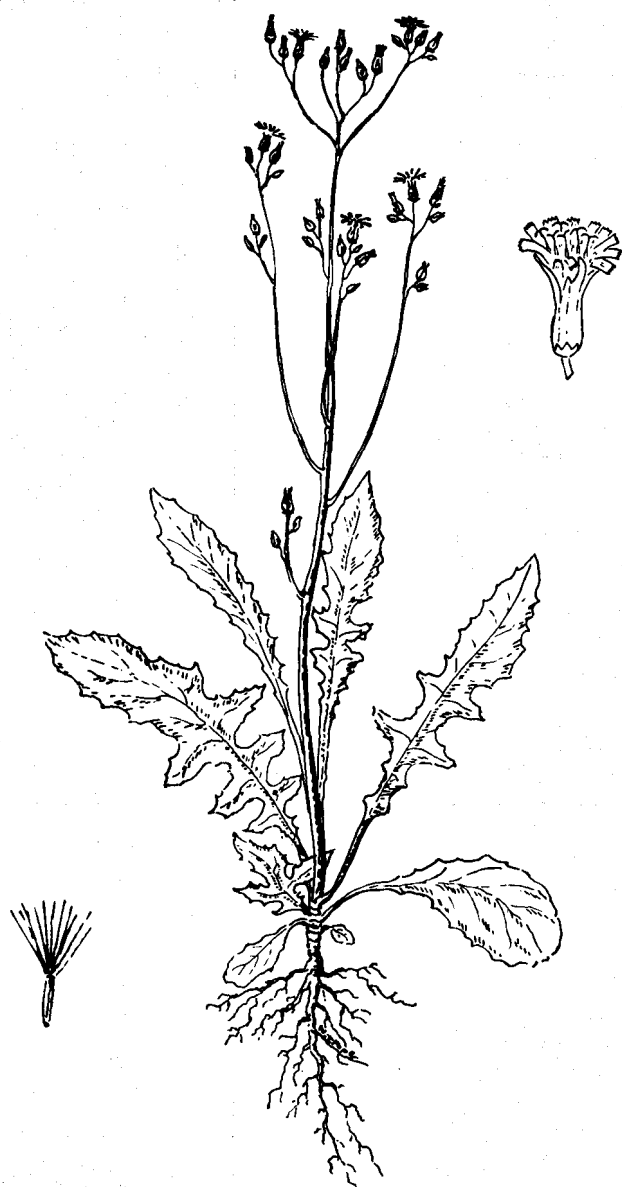
Found in woody and moist regions from sea level to 4,000 feet. A weed in cultivated areas.

---

#### History:

Native from Japan to northwestern India. First collected in Hawaii in 1864.

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## COMPOSITAE (DAISY FAMILY)

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*Zinnia pauciflora* L.

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### ZINNIA, PUAPIHI

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#### Description:

An erect, branching plant, 2 to 3 feet high. **Stem** round in cross-section, brownish-yellow in color, covered with short silky hairs, more so on young portions. **Leaves** opposite, 1-1/2 to 2-1/2 inches long, 1/4 to 1/2 inch wide, broadly lanceolate, closely attached to the stem, hairy on both surfaces, 3-veined, margin entire. **Flower heads** 3/4 to 1-1/2 inches across, 1/2 to 1 inch long, solitary on the branches, on swollen stalks; marginal florets dark red above, whitish-brown below, smooth; central florets small; involucre bracts in series, inner ones longer than the outer, smooth, oblong. **Fruit** 3/8 to 1/2 inch long, about 1/16 inch wide, pointed below and broadened above, ridges clothed with hairs, one edge of one end of the fruit modified into a spine, brownish-black when ripe (22).

#### Propagation:

By seed.

#### Habitat:

Found in dry regions. A weed in cultivated areas and waste-lands.

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#### History:

Native to Mexico and South America.

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## KEY TO ADDED REFERENCES

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(Numbers in parentheses refer to numbered entries in original reference list)

- A: Agnew, A. D., 1974.
- B: Baker, J. G., 1970.
- Bl: Black, J. M., 1957.
- (5) D: Degener, O., 1932-1963.
- (9) H: Hillebrand, W., 1888.
- Ho: Hoshizaki, B. J., 1975.
- L: Long, R. W., and O. Lakela, 1971.
- M: Merrill, E. D., 1952.
- Mu: Munz, P. A., 1974.
- (15) N: Neal, M. C., 1965.
- Ni: Nicholson, D. H., 1975.
- O: Ohwi, J., 1965.
- R: Rotar, P. P., 1968.
- Ro: Rogers, B. S., and A. G. Ogg, Jr., 1981.

## ADDENDUM

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Weed species that have become pests in Hawaii since 1966. The information about each species includes common name, area of origin, and reference (for key to references see facing page).

### ACANTHACEAE

*Asystasia gangetica* (L.) T. Anders. Chinese violet. N:785. Malaya to Africa.

*Dicliptera chinensis* (L.) Juss. Dicliptera. N:787. Tropical Asia.

*Thunbergia grandiflora* Roxb. Bengal trumpet. N:780. India.

### AMARANTHACEAE

*Alternanthera repens* (L.) Ktze. Khaki weed. N:334. Tropical and subtropical America.

### ANACARDIACEAE

*Schinus terebinthifolius* Raddi. Christmas berry. N:525. Brazil.

### ARALIACEAE

*Brassaia actinophylla* Endl. Octopus tree. D:fam 281, N:653. Australia.

### CHENOPODIACEAE

*Atriplex Muelleri* Benth. BI:297. Australia.

*A. semibaccata* R. Br. Australian salt bush. N:331. Australia.

### COMMELINACEAE

*Commelina benghalensis* L. Hairy honohono. D:fam 62, N:185. Asia, Africa.

### COMPOSITAE

*Ageratum Houstonianum* Mill. N:831. Mexico.

*Crassocephalum crepidioides* (Bent.) S. Moore. A:827. South Africa.

*Emilia Fosbergii* Nicholson. Ni:33-34. Neotropics.

*E. Javanica* (Burm. f.) C. B. Robins. Tassel flower. L:848. Old World.

*Erechtites valerianaefolia* (Wolf) DC. D:fam 344, N:853. Tropical America.

*Erigeron Karvinskianus* DC. Daisy fleabane. N:833. Mexico.

*Galinsoga ciliata* (Raf.) Blake. Peruvian daisy. L:834. Tropical America.

*Pluchea odorata* (L.) Cass. Sour bush. D:fam 344, N:836. Tropical America.

*Tridax procumbens* L. Coat buttons. N:845. Central America.

*Verbesina encelioides* (Cav.) B. & H. ex Gray. Golden crown-beard. D:fam 344, N:841. U.S.A., Mexico.

*Wedelia trilobata* (L.) Hitchc. Wedelia. N:839. Tropical America.

### CONVOLVULACEAE

*Merremia tuberosa* (L.) Rendle. Wood rose. D:fam 307, N:709. West Indies.

---

## CRUCIFERAE

*Cardamine flexuosa* With. Bitter cress. O:482. Europe.

*Lepidium virginicum* L. Wild peppergrass. N:370. North America.

## EUPHORBIACEAE

*Euphorbia geniculata* Ortega. Wild spurge. N:516. Tropical America.

*E. heterophylla* L. Fire plant. H:398. Mexico.

*E. thymifolia* L. Thyme-leaved spurge. N:517. Old World.

## GLEICHENIACEAE

*Dicranopteris* spp. Uluhe. N:9. Tropics.

## GRAMINEAE

*Cenchrus biflorus* Roxb. Birdwood grass. R:241. India, Africa.

*Chloris Gayana* Kunth. Rhodes grass. N:69. Africa.

*Hyparrhenia hirta* (L.) Stapf in Prain. R:208. Africa, Middle East.

*H. rufa* (Nees) Stapf in Prain. Thatching grass. R:208. Old World tropics.

*Leptochloa uninerva* (Presl.) Hitchc. & Chase. Mu:979. Oregon, Atlantic coast, South America.

*Poa annua* L. Annual bluegrass. D:fam 47, H:526. Europe.

*Setaria geniculata* (Poir.) Beauv. Perennial foxtail. N:75. Tropical America.

*Themeda gigantea* (Cav.) Hack. in DC. M:50, R:221. Philippines.

## LABIATAE

*Hyptis suaveolens* (L.) Poit. B:259, N:735. South America.

## LAURACEAE

*Cassytha filiformis* L. Kaunoa'oa. D:fam 138, H:383, N:364. Tropics.

## LEGUMINOSAE

*Albizia falcata* (L.) Fosb. Albizia. D:fam 169a, N:404. Moluccas.

*Cassia bicapsularis* L. D:fam 169b, N:425. Tropical America.

*Desmanthus virgatus* (L.) Willd. Virgate mimosa. D:fam 169a. North America, West Indies.

*Desmodium canum* (Gmel.) Schinz & Thellung. Spanish clover. D:fam 169c, N:451. West Indies.

*Indigofera endacaphylla* Jacq. Creeping indigo. L:481. South Africa.

## LOGANIACEAE

*Buddleja asiatica* Lour. Dogtail. D:fam 302, N:683. India to China and Java.

## MELASTOMATACEAE

*Arthrostemma latifolium* D. Don. Arthrostemma. N:646. South America.

---

*Heterocentron subtripplinervium* (Link & Otto) A. Br. & Bouché. Pearl flower. D:fam 274, N:646. Mexico.

*Tetrazygia bicolor* (Triana) Cogn. N:647. Florida, West Indies.

*Tibouchina Urvilleana* (DC.) Cogn. Lasiandra. D:fam 274. Brazil.

#### MORACEAE

*Cecropia obtusifolia* Bertol. Guarumo. N:315. Mexico, Panama.

*Ficus microcarpa* L. Chinese banyan. N:314. Tropical Asia.

#### MYRTACEAE

*Psidium Cattleianum* Sabine. Strawberry guava. N:633. Brazil.

*P. Cattleianum* f. *lucidum* Deg. Yellow strawberry guava. N:633. Brazil.

*P. Guajava* L. Guava. D:fam 273, H:130, N:632. Tropical America.

#### NYCTAGINACEAE

*Boerhavia diffusa* L. (*B. coccinea* Mill.). Red spiderling. L:389. U.S.A.

#### OPHIOGLOSSACEAE

*Ophioglossum* spp. Ho:200. World wide.

#### PASSIFLORACEAE

*Passiflora edulis* f. *flavicarpa* Deg. Yellow liliko'i. D:fam 250, N:599. Australia.

*P. laurifolia* L. Yellow granadilla. H:139, N:597. Tropical America.

*P. mollissima* (HBK.) Bailey. Banana poka. N:599. Tropical and sub-tropical America.

*P. suberosa* L. Huehue-haole. D:fam 250, N:597. Tropical and sub-tropical America.

*P. subpeltata* Ortega. White passion flower. D:fam 250, N:599. South America.

#### POLYPODIACEAE

*Nephrolepis* spp. Sword fern. N:14. Tropics.

*Pteridium aquilinum* (L.) Kuhn. Bracken fern. N:15. Tropics.

#### PONTEDERIACEAE

*Eichornia crassipes* (Mart.) Solms. Water hyacinth. D:fam 63, N:186. Tropical America.

#### PROTEACEAE

*Grevillea robusta* A. Cunn. in R. Br. Silk oak. D:fam 98, N:320. Australia.

#### ROSACEAE

*Rubus ellipticus* Sm. Yellow Himalayan raspberry. N:391. Himalaya.

*R. moluccanus* L. B:95. Himalayas to Australia.

*R. rosaefolius* Sm. Thimble berry. D:fam 167, N:391. Tropical Asia.

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#### SAPINDACEAE

*Cardiospermum Halicacabum* L. Balloon vine. H:85, N:532. Tropics.  
*Dodonaea* spp. A'ali'i. D:fam 210, H:88. Hawaii.

#### SOLANACEAE

*Solanum elaeagnifolium* Cav. White horse-nettle. N:747. Missouri to Arizona.  
*S. sarrachoides* Sendt. Hairy nightshade. Ro:6. North America.

#### TILIACEAE

*Heliocarpus popayaensis* HBK. White moho. N:548. Mexico to Paraguay.

#### ULMACEAE

*Trema orientalis* (L.) Bl. Gunpowder tree. N:298. Malaysia.

#### UMBELLIFERAE

*Apium tenuifolium* (Moench) Thell. ex Hegi. Fir-leaved celery. D:fam 282, N:659. New World.  
*Hydrocotyle sibthorpioides* Lam. Marsh pennywort. D:fam 282. Mauritius.

#### URTICACEAE

*Pilea microphylla* (L.) Liebm. Artillery plant. N:317. West Indies, tropical America.

#### VERBENACEAE

*Citharexylum caudatum* L. Juniper berry. N:726. Jamaica.

#### ZINGIBERACEAE

*Hedychium coronarium* Koenig in Retz. White ginger. D:fam 76, H:433, N:252. India.  
*H. flavescens* Carey in Roscoe. Yellow ginger. N:252. India.  
*H. Gardnerianum* Roscoe. Kahili ginger. N:253. Himalaya.

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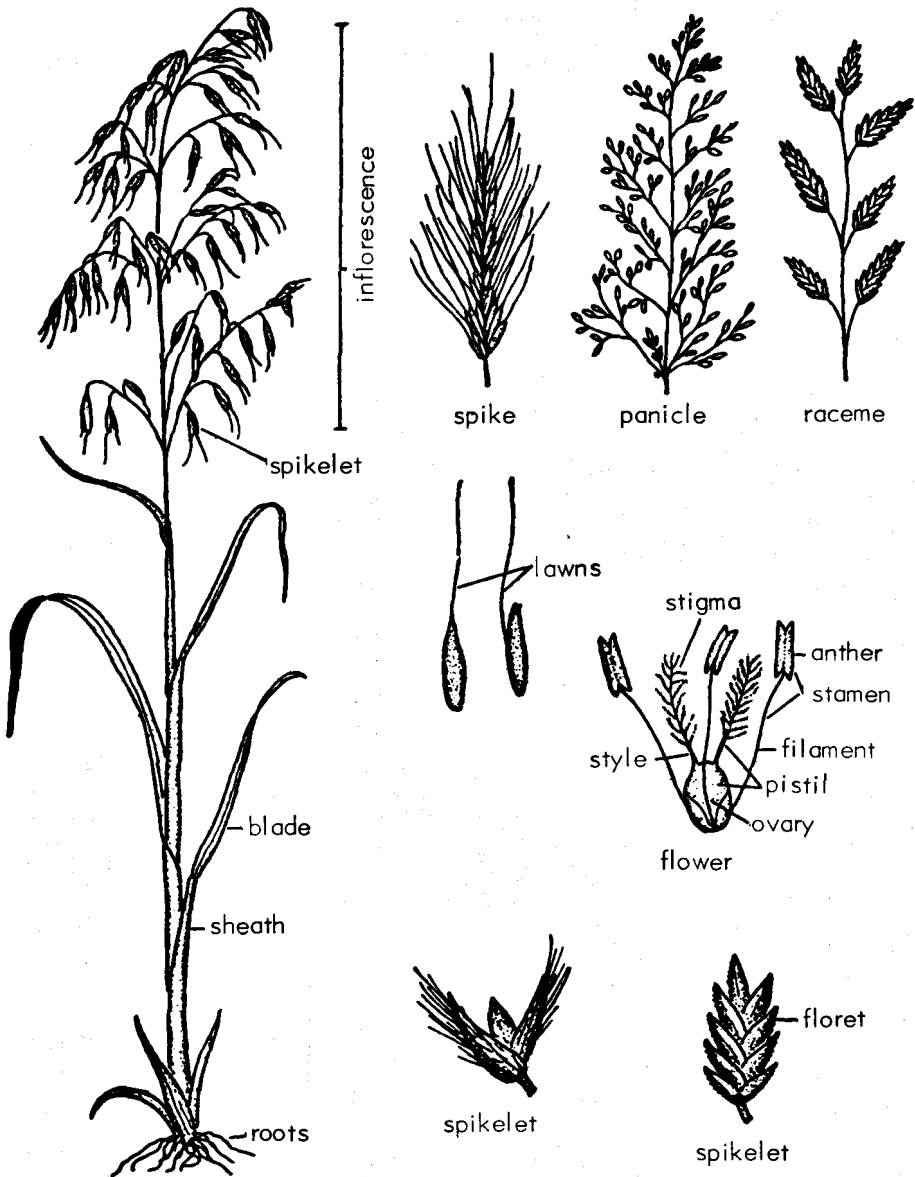
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# ILLUSTRATED GLOSSARY

## Parts of Grass Plant



## Leaf Characteristics



linear



oblong



ovate



oval



obovate



lanceolate



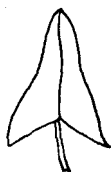
oblanceolate



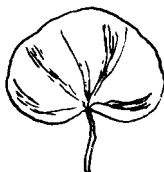
rhomboidal



spoon-shaped



arrowhead-shaped



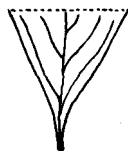
kidney-shaped



heart-shaped



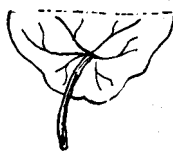
triangular



wedge-shaped



obtuse



peltate



sheathing



entire



wavy



scalloped



toothed



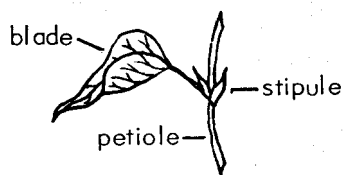
serrate



lobed

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## Simple Leaf



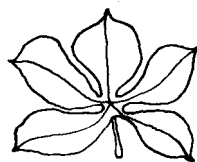
## Compound Leaves



pinnate



bipinnate



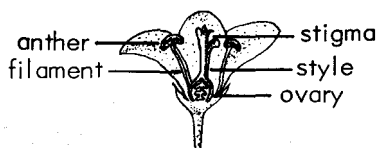
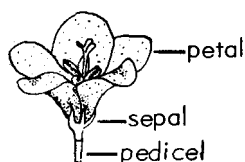
palmate



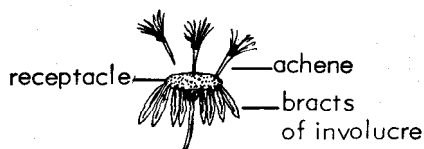
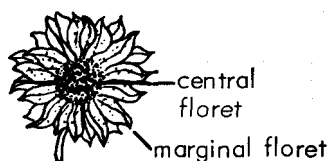
trifoliate

## Flower Characteristics

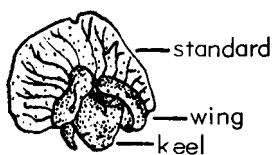
### SIMPLE FLOWER



### COMPOSITE FLOWER



### PEA-SHAPED FLOWER



### INFLORESCENCES



spike



raceme



panicle



umbel

## GLOSSARY OF BOTANICAL TERMS

---

**Adventitious buds** Buds appearing on occasion, not in regular places.

**Achene** A small, dry, hard, 1-celled, 1-seeded fruit.

**Annual** A plant which flowers, seeds, and dies in one season.

**Anther** The pollen-bearing part of a stamen.

**Aromatic** Fragrant; spicy; with a sharp smell.

**Ascending** Growing slantingly upward.

**Awl-shaped** Narrow and sharp pointed.

**Awn** A slender, bristlelike appendage of fruit or seed.

**Axil** The angle between a leafstalk or branchlet and the stem.

**Axillary** In an axil.

**Axis** The main stem.

**Bi-** A Latin prefix meaning two, twice, or double.

**Biennial** Of two season's growth, usually flowering and fruiting during the last season.

**Beaked** Ending in a long, prominent point.

**Bract** A reduced or modified leaf. Often scalelike; as the bracts of flower heads of composites.

**Bristle** A stiff hair.

**Calyx** The outer circle or set of flower parts, usually green and leaf-like. The individual parts or lobes are called sepals.

**Capsule** A dry, several-celled fruit, splitting at maturity.

**Corm** The solid bulblike part of an underground stem.

**Corolla** The circle or spiral of petals in the flower.

**Deciduous** Not persistent, but falling away at the end of the growing season.

**Dehiscent** Splitting open by valves, such as the way a pod splits open to free its seed.

**Drupe** Stone-fruit; a fleshy, 1-seeded fruit with seed enclosed in a stony layer.

---

**Endemic** Growing only in a particular geographic area.

**Entire** Even; smooth; not toothed or divided; used in describing leaf margins.

**Filament** Thread; the stalk of the stamen which supports the anther.

**Floret** A small flower, usually one of a dense cluster; an individual flower of grasses and composites.

**Follicle** A dry fruit, opening along one suture.

**Fruit** The ripened ovary, containing one or more seeds.

**Gland** A secreting surface or organ.

**Habitat** The locality or type of place where a plant grows naturally.

**Head** A dense cluster of stalkless flowers or fruits.

**Herb** A plant which does not have a firm woody structure.

**Indehiscent** Not splitting open by valves; remaining closed.

**Inflorescence** The flowering part of a plant.

**Involucre** A circle or close series of bracts which surround a flower cluster or a single flower.

**Keel** In legumes, the two lower united petals of a pea-shaped flower.

**Labiata** Lipped.

**Lanceolate** Lance-shaped; several times longer than wide, broadest below the middle and tapering to the tip.

---

---

**Lateral** On the side.

**Leaflet** A single part of a compound leaf.

**Linear** Long and narrow, with parallel sides.

**Margin** The edge or boundary line of a body.

**Membranous** Thin and soft, usually translucent.

**Midrib** The middle or main vein of a leaf.

**Node** The joint of a stem where one or more leaves are or have been attached.

**Nutlet** A small, 1-celled, 1-seeded, hard, bony fruit.

**Oblong** Longer than broad with nearly parallel sides.

**Obtuse** Blunt or rounded at the end.

**Ovary** The lower, seed-bearing part of the pistil.

**Ovate** Egg-shaped.

**Palmate** Radiately lobed or divided in a handlike manner.

**Panicle** A compound flower cluster with a main axis and being at least twice branched.

**Pedicel** The stalk of a single flower in a panicle or raceme.

**Peltate** Attached to its stalk on the lower surface.

**Perennial** A plant with a long life-cycle, (extending over 2 years).

**Persistent** Remaining attached; long-lived.

**Petal** A division of the corolla.

**Petiole** The leafstalk.

**Pinnæ** The main divisions of a compound leaf.

**Pinnate** A compound leaf with leaflets on either side of a single leafstalk; feather-formed.

**Pinnule** A leaflet which is the finest division of a compound leaf.



---

**Pistil** A part of the flower consisting of ovary, style, and stigma.

**Pith** The soft spongy central portion of most broadleaf stems.

**Pod** A dry, hollow fruit; like that of the garden pea or bean.

**Prickle** A small spine; an outgrowth of the outer skin.

**Prostrate** Lying flat on a surface.

**Raceme** A simple inflorescence with a long unbranched axis and stalked flowers.

**Receptacle** The more or less enlarged or elongated end of the flower stalk; in composites it is greatly expanded.

**Resinous** Containing or producing resin.

**Rhomboidal** Quadrangular with the lateral angles obtuse.

**Rosette** A cluster of closely arranged, radiating leaves at or close to the ground.

**Sepal** A division of the calyx.

**Serrate** A saw-toothed margin.

**Sessile** Not stalked; attached directly to the stem.

**Sheath** A long tubular or enrolled portion, as the lower part of the leaf which surrounds the stem of a grass.

**Spike** An unbranched, elongated inflorescence; flowers (or spikelets) are sessile or almost sessile.

**Spikelet** In grasses and sedges, the ultimate flower cluster composed of florets and their chafflike bracts.

**Spine** A sharp woody outgrowth of the stem.

**Spreading** Diverging and nearly prostrate.

**Stamen** A part of the flower consisting of filament and anther.

**Standard** In legumes, the broad, upper petal of a pea-shaped flower.

**Sterile** Not producing seeds.

**Stigma** The terminal part of the pistil which receives the pollen.

**Stipule** Small, leafy expansions at the base of the leafstalk.

**Style** The slender stalk between the stigma and the ovary.

---

**Succulent** Juicy, fleshy; soft and thickened in texture.

**Suture** A line of dehiscence or junction in dry fruits.

**Taproot** A root with a stout, tapering body; the primary root from which smaller roots grow.

**Tendrils** The slender, leafless, coiling organ of climbing plants.

**Terminal** At the end of a branch or stem.

**Trifoliate** With three leaflets.

**Tuber** A short, thickened part, usually an enlarged end of an underground stem.

**Tubercle** A small tuber.

**Umbel** An inflorescence in which the flower stalks all arise from the same point.

**Valve** One of the sections into which a capsule splits.

**Whorl** In a circle; three or more leaves or flowers at a node.

**Wing** A thin extension.

## INDEX (A)

---

- A'ali'i, 460  
*Abutilon*  
  *grandifolium*, 248  
  *kauaiense*, 248  
  *molle*, 248  
  *mollissimum*, 248  
*Acacia*  
  *decurrens*, 172  
  *farnesiana*, 174  
  *mollissima*, 172  
Acanthaceae, 362, 457  
*Acanthospermum*  
  *australe*, 382  
  *brasilum*, 382  
  *hispidum*, 384  
*Acanthus* family, 362  
*Achyranthes*, 134  
*Achyranthes*  
  *aspera*, 134  
  *indica*, 134  
African dropseed, 84  
*Ageratum*, 386  
*Ageratum*  
  *conyzoides*, 386  
  *Houstonianum*, 457  
*Agrostis*  
  *africana*, 84  
  *alba*, 2  
  *capensis*, 84  
  *diandra*, 86  
  *indica*, 88  
  *radiata*, 16  
*Aiea* morning glory, 318  
*Albizia*, 458  
*Albizia falcataria*, 458  
*Alena*, 144  
*Alternanthera*  
  *repens*, 457  
  *sessilis*, 136  
*Alysicarpus*, 176  
*Alysicarpus vaginalis*, 176  
*Amaranth*  
  family, 134-142  
  slender, 142  
  spiny, 140  
    spleen, 138  
Amaranthaceae, 134-142, 457  
*Amaranthus*  
  *dubius*, 138  
  *gracilis*, 142  
  *spinosus*, 140  
  *viridis*, 142  
*Ambrosia artemisiaefolia*, 388  
American mangrove, 280  
Anacardiaceae, 457  
*Anagallis arvensis*, 296  
*Andropogon*  
  *aciculatum*, 18  
  *barbatus*, 14  
  *bicornis*, 4  
  *insularis*, 94  
  *pertusus*, 6  
  *refractus*, 22  
  *sorghum*, 82  
  *subulatus*, 18  
*Aneilema nudiflora*, 112  
*Anethum foeniculum*, 292  
Annual bluegrass, 458  
*Apium tenuifolium*, 460  
Apple of Peru, 350  
Apple of Sodom, 360  
Araceae, 110  
Araliaceae, 457  
Aramina, 266  
*Argemone*  
  *alba*, 160  
  *glauca*, 160  
  *mexicana*, 160  
*Anthrostemma*, 458  
*Arthrostemma latifolium*, 458  
Arum family, 110  
Asclepiadaceae, 298-300  
*Asclepias curassavica*, 298  
Asiatic hawksbeard, 452  
Asiatic pennywort, 290  
*Asystasia gangetica*, 457  
*Atriplex*  
  *Muelleri*, 457  
  *semibaccata*, 457  
*Atropa physalodes*, 350

## INDEX (A-C)

---

Australian salt bush, 457  
*Axonopus Poiretii*, 88

*Baccharis indica*, 428

Balloon plant, 300

Balloon vine, 460

Balsam apple, 378

*Balsamona Pinto*, 278

Banana poka, 459

Banks grevillea, 122

Banyan, Chinese, 459

Barbwire grass, 22

Bartyard grass, 38

Basella family, 152

Basellaceae, 152

Bayberry family, 118

Beach morning-glory, 310

Beach wiregrass, 26

Bean

castor, 242

family, 172-220

hyacinth, 208

lablab, 208

Beardgrass, pitted, 6

Beggar tick, 390

Beggarweed

Florida, 202

three-flowered, 204

Bengal trumpet, 457

Bermuda grass, 24

Berry

Christmas, 457

juniper, 460

thimble, 459

*Biancaea sepriaria*, 180

*Bidens*

*nodiflora*, 440

*pilosa*, 390

Bindweed, field, 302

Birdwood grass, 458

Bitter cress, 458

Black mustard, 164

Black wattle, 172

Blackberry, 170

Blood flower, 298

Blue morning-glory, 314

Bluegrass, annual, 458

Boerhavia, 144

*Boerhavia diffusa*, 144

*Borreria laevis*, 368

*Bothriochloa pertusa*, 6

*Boussingaultia*

*basselloides*, 152

*cordifolia*, 152

*gracilis*, 152

*Brachiaria mutica*, 8

Bracken fern, 459

*Brassaia actinophylla*, 457

*Brassica nigra*, 164

Bristlegrass, yellow, 76

Bristly foxtail, 80

Broad-leaved plantain, 366

Broom

French, 198

Scotch, 200

Spanish, 218

Buckhorn, 364

Buckwheat family, 124-126

Buddleja asiatica, 458

Buffalo grass, 90

Bull thistle, 396

Bur bush, 244

Butterflyweed, 298

Buttonweed, 368

*Cacalia sonchifolia*, 404

Cactaceae, 276

Cactus, 276

Cactus family, 276

*Caesalpinia*

*Bonduc*, 178

*decapetata*, 180

*Jayabo*, 178

*major*, 178

*sepriaria*, 180

Caladium, 110

California grass, 8

*Calonyction aculeatum*, 306

Canada fleabane, 408

## INDEX (C)

---

- Canavalia*  
  *carthartica*, 182  
  *microcarpa*, 182  
Canna, 116  
Canna family, 116  
*Canna indica*, 116  
Cannaceae, 116  
Cape gooseberry, 354  
Caper family, 162  
Capparidaceae, 162  
*Capriola Dactylon*, 24  
*Cardamine flexuosa*, 458  
*Cardiospermum Halicacabum*, 460  
*Carduus*  
  *lanceolatus*, 396  
  *vulgaris*, 396  
Carolina lovegrass, 44  
Caryophyllaceae, 154-158  
Cassia  
  *bicapsularis*, 458  
  *Leschenaultiana*, 184  
  *mimosoides*, 184  
  *occidentalis*, 186  
*Cassythia filiformis*, 458  
Castor bean, 242  
Catchfly, small-flowered, 156  
Cats claw, 180  
Cats-ear, hairy 422  
Cayenne vervain, 330  
*Cecropia obtusifolia*, 459  
Celery, fir-leaved, 460  
*Cenchrus*  
  *biflorus*, 458  
  *brevisetus*, 10  
  *echinatus*, 10  
  *pungens*, 10  
  *setosus*, 72  
*Centaurea melitensis*, 392  
*Centella asiatica*, 290  
*Chaetochloa*  
  *glauca*, 76  
  *lutescens*, 76  
  *palmifolia*, 78  
  *verticillata*, 80  
*Chamaecrista leschenaultiana*, 184  
*Chamaesyce glomifera*, 232  
Cheese weed, 256  
Chenopodiaceae, 128-132, 457  
*Chenopodium*  
  *album*, 128  
  *ambrosioides*, 130  
Chinese banyan, 459  
Chinese violet, 457  
*Chloris*  
  *barbata*, 14  
  *divaricata*, 12  
  *Gayana*, 458  
  *inflata*, 14  
  *paraguayensis*, 14  
  *radiata*, 16  
Christmas berry, 457  
*Chrysanthemum Leucanthemum*, 394  
*Chrysopogon*  
  *aciculatus*, 18  
  *sabulatus*, 18  
*Cirsium*  
  *lanceolatum*, 396  
  *vulgare*, 396  
*Citharexylum caudatum*, 460  
*Cleome*  
  *gynandra*, 162  
  *pentaphylla*, 162  
Clerodendrum, 326  
*Clerodendrum*  
  *fragrans*, 326  
  *japonicum*, 326  
Clidemia, 284  
*Clidemia hirta*, 284  
Clover  
  one-leaved, 176  
  Spanish, 206, 458  
Coat buttons, 457  
Cocklebur, 450  
Cockroach berry, 356  
Cocoa family, 268  
Coffee  
  family, 368-374  
  senna, 186  
*Coix lacryma-jobi*, 20  
Comb hyptis, 338

## INDEX (C-D)

---

- Commelina*  
  *benghalensis*, 457  
  *diffusa*, 112  
  *nudiflora*, 112  
Commelinaceae, 112, 457  
Common fennel, 292  
Common ragweed, 388  
Compositae, 382-454, 457  
Convolvulaceae, 302-324, 457  
*Convolvulus*  
  *arvensis*, 302  
  *brasiliensis*, 310  
  *cairicus*, 312  
  *obscurus*, 316  
  *reptans*, 308  
*Conyza*  
  *bonariensis*, 398  
  *canadensis*, 408  
  *cinerea*, 448  
  *parva*, 408  
Corn spurry, 158  
*Coronopus didymus*, 166  
Cotton, native, 250  
Crabgrass  
  hairy, 32  
  Henrys, 28  
  large, 32  
  slender, 30  
  smooth, 34  
  violet, 34  
Crape myrtle family, 278  
*Crassocephalum crepidioides*, 457  
Creeping indigo, 458  
Creeping swamp morning-glory, 308  
*Crepis*  
  *japonica*, 452  
  *molokaiensis*, 422  
Cress, bitter, 458  
Crimson sage, 344  
*Crotalaria*  
  *Berteriana*, 188  
  *fulva*, 188  
  *incana*, 190  
  *longirostrata*, 192  
  *mucronata*, 194  
  *Saltiana*, 194  
  *sericea*, 196  
  *spectabilis*, 196  
  *striata*, 194  
Crown-beard  
  golden, 457  
  small yellow, 436  
Cruciferae, 164-166, 458  
Cucumber, wild spiny, 376  
*Cucumis dipsaceus*, 376  
Cucurbitaceae, 376-378  
*Cuphea*  
  *Balsamona*, 278  
  *carthagenensis*, 278  
  *hyssopifolia*, 278  
*Cuscuta sandwichiana*, 304  
*Cyathodes*  
  *Macraeana*, 294  
  *Tameiameiae*, 294  
*Cymbopogon refractus*, 22  
*Cymburus urticaefolius*, 334  
*Cynodon*  
  *Dactylon*, 24  
  *indicus*, 40  
*Cynosurus*  
  *aegyptius*, 26  
  *indicus*, 40  
Cyperus, 100  
Cyperus, marsh, 100  
*Cyperus*  
  *brevifolius*, 96  
  *caricifolius*, 102  
  *esculentus*, 98  
  *hypochlorus*, 100  
  *javanicus*, 102  
  *Kyllingia*, 104  
  *pennatus*, 102  
  *rotundus*, 106  
*Cytisus*  
  *monspessulanus*, 198  
  *scoparius*, 200  
*Dactyloctenium aegyptium*, 26  
Daisy  
  false, 400  
  family, 382-454  
  ox-eye, 394
-

## INDEX (D-E)

---

- Peruvian, 457  
tree, 424
- Daisy fleabane, 457
- Dallis grass, 58
- Dandelion, 444
- Datura stramonium*, 348
- Day flower, 122
- Desmanthus virgatus*, 458
- Desmodium*  
  *canum*, 458  
  *sandwicense*, 206  
  *tortuosum*, 202  
  *triflorum*, 204  
  *uncinatum*, 206
- Dicliptera, 457
- Dicliptera chinensis*, 457
- Dicranopteris* spp., 458
- Digitaria*  
  *adscendens*, 28  
  *chinensis*, 34  
  *consanguinea*, 30  
  *Dactylon*, 24  
  *Henryi*, 28  
  *pruriens*, 30  
  *sanguinalis*, 32  
  *stolonifera*, 24  
  *violascens*, 34
- Ditremexia occidentalis*, 186
- Dodder, 304
- Dodonaea* spp., 460
- Dogtail, 458
- Dolichos*  
  *Lablab*, 208  
  *minimus*, 216
- Downy rose myrtle, 282
- Dropseed  
  African, 84  
  Indian, 86
- Drymaria, 154
- Drymaria cordata*, 154
- Echinochloa*  
  *colona*, 36  
  *crusgalli*, 38
- Eclipta*  
  *alba*, 400  
  *prostrata*, 400
- Eichornia crassipes*, 459
- Ekoa, 212
- Elephant grass, 68
- Elephantopus, 402  
  spike, 430
- Elephantopus*  
  *mollis*, 402  
  *spicatus*, 430
- Elephants-foot, 402  
  false, 430
- Eleusine*  
  *aegyptia*, 26  
  *gracilis*, 40  
  *indica*, 40  
  *polydactyla*, 40
- Emex, 124, 126
- Emex australis*, 124  
  *spinosa*, 126
- Emilia*  
  *Fosbergii*, 457  
  *Javanica*, 457  
  *sonchifolia*, 404
- Epacridaceae, 294
- Epacris family, 294
- Eragrostis*  
  *amabilis*, 46  
  *caroliniana*, 44  
  *cilianensis*, 42  
  *major*, 42  
  *megastachya*, 42  
  *pectinacea*, 44  
  *tenella*, 46
- Erechtites*  
  *hieracifolia*, 406  
  *valerianaefolia*, 457
- Erigeron*  
  *albidus*, 398  
  *bonariensis*, 398  
  *canadensis*, 408  
  *Karvinskianus*, 457  
  *linifolium*, 398
- Erodium cicutarium*, 222

## INDEX (E-G)

---

- Eupatorium*  
  *adenophorum*, 410  
  *glandulosum*, 410  
  *riparium*, 412
- Euphorbia*  
  *bifida*, 232  
  *geniculata*, 458  
  *glomerifera*, 232  
  *heterophylla*, 458  
  *hirta*, 234  
  *hypericifolia*, 232  
  *Peplus*, 236  
  *pilulifera*, 234  
  *prostrata*, 238  
  *thymifolia*, 458
- Euphorbiaceae, 232, 242, 458
- Euxolus viridis*, 142
- Evening primrose family, 288
- False  
  daisy, 400  
  elephants-foot, 430  
  mallow, 258  
  puncture vine, 228  
  ragweed, 414
- Feathery pennisetum, 72
- Fennel  
  common, 292  
  sweet, 292
- Fern  
  bracken, 459  
  sword, 459
- Ficus microcarpa*, 459
- Field bindweed, 302
- Fimbriate paspalum, 60
- Fimbristylis*, 108
- Fimbristylis annua*, 108  
  *dichotoma*, 108  
  *diphylla*, 108  
  *polymorpha*, 108
- Fingergrass  
  radiate, 16  
  swollen, 14
- Firebush, 118
- Fireplant, 458
- Fireweed, 408
- Fir-leaved celery, 460
- Five-fingered morning-glory, 312
- Fleabane  
  Canada, 400  
  Indian, 428
- Floras paintbrush, 404
- Florida beggarweed, 202
- Foeniculum vulgare*, 292
- Fountain grass, 70
- Four o'clock, 146  
  family, 144-146
- Foxtail  
  bristly, 80  
  perennial, 458  
  West Indian, 4  
  yellow, 76
- Franseria*  
  *strigulosa*, 414  
  *tenuifolia*, 414
- French broom, 198
- Fringe-rush, tall, 108
- Fuzzy rattle pod, 190
- Gaillardia, 416
- Gaillardia pulchella*, 416
- Galinsoga, 418
- Galinsoga*  
  *ciliata*, 457  
  *parviflora*, 418
- Garden spurge, 234
- Geraniaceae, 222
- Geranium cicutarium*, 222
- Geranium family, 222
- German ivy, 434
- Ginger  
  kahili, 460  
  white, 460  
  yellow, 460
- Gleicheniaceae, 458
- Golden crown-beard, 457
- Gomphocarpus, 300
- Gomphocarpus physocarpus*, 300
- Gomphrena sessilis*, 136



## INDEX (G-H)

---

- Gooseberry, Cape, 354  
Goosefoot family, 128-132  
Goosegrass, 40  
Gorse, 220  
*Gossypium*  
  *sandvicense*, 250  
  *tomentosum*, 250  
Gourd family, 376-378  
Graceful spurge, 232  
Gramineae, 2-94, 458  
Grass  
  birdwood, 458  
  family, 2-94  
Green kyllinga, 96  
*Grevillea*  
  *Banksii*, 122  
  *robusta*, 459  
Guarumo, 459  
Guava, 459  
  strawberry, 459  
  yellow strawberry, 459  
*Guilandina Bonduc*, 178  
Guinea grass, 50  
Gunpowder tree, 460  
Guttiferae, 270  
*Gynandropsis*  
  *gynandra*, 162  
  *pentaphylla*, 162  
  
Haiku, 122  
Hakonokono, 46  
Hair  
  abutilon, 248  
  cats-ear, 422  
  crabgrass, 32  
  honohono, 457  
  horseweed, 398  
  merremia, 324  
  morning-glory, 324  
  nightshade, 460  
Hamakua pamakani, 412  
Haole koa, 212  
Hau, 252  
Hawaiian moonflower, 320  
  
Hawksbeard, Asiatic, 452  
Hawkweed, 426  
Healall, 342  
*Hedychium*  
  *coronarium*, 460  
  *flavescens*, 460  
  *Gardnerianum*, 460  
Hedyotis, 370  
*Hedyotis biflora*, 370  
*Hedysarum*  
  *tortuosum*, 202  
  *triflorum*, 204  
  *uncinatum*, 206  
  *vaginale*, 176  
*Heliocarpus popayaensis*, 460  
Henrys crabgrass, 28  
Herons bill, 222  
*Hesperocnide sandwicensis*, 120  
*Heterocentron subtriplinervium*, 459  
*Heterotheca grandiflora*, 420  
Hialoa, 268  
Hibiscus family, 248-266  
*Hibiscus tiliaceus*, 252  
Hilahila, 214  
Hilo grass, 56  
*Hippobroma longiflora*, 380  
*Holcus*  
  *pertusus*, 6  
  *halepensis*, 82  
*Holosteum cordatum*, 154  
Honohono, 112  
  hair, 457  
Hose-nettle, white, 460  
Horseweed  
  hair, 398  
  small-leaf, 408  
Huehue-haole, 459  
Hyacinth bean, 208  
*Hydrocotyle*  
  *asiatica*, 290  
  *sibthorpioides*, 460  
*Hyparrhenia*  
  *hirta*, 458  
  *rufa*, 458  
*Hypericum perforatum*, 270

## INDEX (H-L)

---

- Hypochoeris radicata*, 422  
Hyptis, 338  
*Hyptis pectinata*, 338  
    *suaveolens*, 458
- Illima  
    lei, 260  
    rhomboid, 262
- Indian  
    dropseed, 86  
    fleabane, 428
- Indigo, 210
- Indigofera*  
    *anil*, 210  
    *endacaphylla*, 458  
    *suffruticosa*, 210
- Ionoxalis Martiana*, 226
- Ipomoea*  
    *aegyptia*, 324  
    *alba*, 306  
    *aquatica*, 308  
    *bona-nox*, 306  
    *brasiliensis*, 310  
    *cairica*, 312  
    *congesta*, 314  
    *indica*, 314  
    *insularis*, 314  
    *obscura*, 316  
    *palmata*, 312  
    *pentaphylla*, 324  
    *pes-caprae*, 310  
    *reptans*, 308  
    *triloba*, 318  
    *tuboides*, 320  
    *tuberculata*, 312
- Iridaceae, 114
- Iris family, 114
- Ironweed, little, 448
- Ischaemum secundatum*, 90
- Isenberg bush, 282
- Isotoma longiflora*, 380
- Ivy, German, 434
- Jacquemontia sandwicensis*, 322
- Jamaica vervain, 332
- Japanese tea, 184
- Jimson weed, 348
- Jobs tears, 20
- Johnson grass, 82
- Joyweed, sessile, 136
- Jungle-rice, 36
- Juniper berry, 460
- Jussieuia*  
    *erecta*, 288  
    *ligustraefolia*, 288  
    *octivalvis*, 288  
    *suffruticosa*, 288  
    *villosa*, 288
- Kahili flower, 122
- Kahili ginger, 460
- Kakalaioa, 178
- Kakonakona, 54
- Kamole, 288
- Kaunao'oa, 458
- Khaki weed, 457
- Kikania, 450
- Kikania-lei, 356
- Klamath weed, 270
- Klu, 174
- Koali-ai, 312
- Koali-awahia, 314
- Kosters curse, 284
- Kyllinga  
    green, 96  
    white, 104
- Kyllingia*  
    *brevifolia*, 96  
    *monocephala*, 104
- Labiatae, 338-346, 458
- Lablab bean, 208
- Lambsquarters, 128
- Lantana, 328
- Lantana*  
    *aculeata*, 328  
    *camara*, 328
- Large crabgrass, 31
- Lasiandra, 459

## INDEX (L-M)

---

Lauraceae, 458  
*Laurentia longiflora*, 380  
Leguminosae, 172-220, 458  
Lei ilima, 260  
*Leonotis nepetaefolia*, 340  
*Leontodon*  
    *autumnalis*, 422  
    *Taraxacum*, 444  
*Lepidium*  
    *didymum*, 166  
    *virginicum*, 458  
*Leptochloa univera*, 458  
*Leucaena*  
    *glauca*, 212  
    *leucocephala*, 212  
Liliko'i, 459  
Linden family, 244-246  
Lions-ear, 340  
Little bell, 318  
Little ironweed, 448  
Lobelia family, 380  
*Lobelia longiflora*, 380  
Lobeliaceae, 380  
Loganiaceae, 458  
Long-beaked rattle pod, 192  
Love-in-a-mist, 272  
Lovegrass, 46  
    Carolina, 44  
    pectinate, 44  
*Ludwigia octovalvis*, 288  
Lythraceae, 278  
*Lythrum carthagenensis*, 278

Madeira vine, 152  
Maile pilau, 372  
Malachra, 254  
*Malachra alceaefolia*, 254  
Mallow, false, 258  
Maltese thistle, 392  
*Malva*  
    *coromandeliana*, 258  
    *parviflora*, 256  
    *rotundifolia*, 256  
Malvaceae, 248-266

*Malvastrum*  
    *coromandelianum*, 258  
    *tricuspidatum*, 258  
Mangosteen family, 270  
Mangrove  
    American, 280  
    family, 280  
Manienie, 24  
Mao, 250  
Marigold  
    tree, 446  
    wild, 442  
Marsh cyperus, 102  
Marsh pennywort, 460  
Marvel-of-Peru, 146  
Maui pamakani, 410  
Maunaloa, 182  
*Melampodium australe*, 382  
Melastoma, 286  
Melastoma family, 284-286  
*Melastoma*  
    *hirta*, 284  
    *malabathricum*, 286  
Melastomataceae, 284-286, 458  
*Melinis minutiflora*, 48  
*Merremia*  
    *aegyptia*, 324  
    *tuberosa*, 457  
Mexican tea, 130  
Milkweed family, 298-300  
Miki palaoa, 186  
*Mimosa*  
    *decurrens*, 172  
    *farnesiana*, 174  
    *glauca*, 212  
    *leucocephala*, 212  
    *pudica*, 214  
    *unijuga*, 214  
Mint family, 338-346  
*Mirabilis Jalapa*, 146  
*Mirasolia diversifolia*, 446  
Moho, white, 460  
Molasses grass, 48  
*Momordica Charantia*, 378  
*Montagnea hibiscifolia*, 424

## INDEX (M-P)

---

- Montanoa, 424  
*Montanoa hibiscifolia*, 424  
Montbretia, 114  
Moonflower, 306  
    Hawaiian, 320  
Moraceae, 459  
Morning-glory, 316  
    Aiea, 318  
    beach, 310  
    blue, 314  
    creeping swamp, 308  
    family, 302-324  
    five-fingered, 312  
    hairy, 324  
    white-flowered, 306  
Mustard  
    black, 164  
    family, 164-166  
*Myrica Faya*, 118  
Myricaceae, 118  
Myrtaceae, 282, 459  
Myrtle  
    downy rose, 282  
    family, 282  
*Myrtus tomentosa*, 282  
  
Napier grass, 68  
Narrow-leaved plantain, 364  
Natal redtop, 74  
Native cotton, 250  
Needle grass, 92  
*Nepeta pectinata*, 338  
*Nephrolepis*, spp., 459  
Nettle  
    family, 120  
    stinging, 120  
Nettle-leaved vervain, 334  
*Nicandra physalodes*, 350  
Nickers, yellow, 178  
*Nicotiana glauca*, 352  
Nightshade, hairy, 460  
Niruri, 240  
Nodeweed, 440  
Nohu, 228  
  
Nutsedge  
    purple, 106  
    yellow, 98  
Nyctaginaceae, 144-146, 459  
  
Oak, silk, 459  
Octopus tree, 457  
*Oenothera octivalvis*, 288  
Oi, 336  
Onagraceae, 288  
One-leaved clover, 176  
*Operculina aegyptia*, 324  
Ophioglossaceae, 459  
*Ophioglossum* spp., 459  
*Opuntia*  
    *megacantha*, 276  
    *tuna*, 276  
Oxalidaceae, 224  
*Oxalis*  
    *corniculata*, 224  
    *Martiana*, 226  
Ox-eye daisy, 394  
  
*Paederia foetida*, 372  
Pakai kuku, 140  
Palm grass, 78  
Pamakani  
    Hamakua, 412  
    Maui, 140  
Panama paspalum, 60  
Panicum, tall, 8  
*Panicum*  
    *adscendens*, 28  
    *barbinode*, 8  
    *chinensis*, 34  
    *cinereum*, 154  
    *colonom*, 36  
    *crusgalli*, 38  
    *Dactylon*, 24  
    *glaucum*, 76  
    *guadaloupense*, 8  
    *lutescens*, 76  
    *maximum*, 50  
    *minutiflorum*, 34  
    *muticum*, 8
-

## INDEX (P)

---

- nervosum*, 78
- neuroides*, 78
- palmaefolium*, 78
- pruriens*, 30
- purpurascens*, 8
- repens*, 52
- sanguinale*, 32
- torridum*, 54
- verticillatum*, 80
- violascens*, 34
- Panini, 276
- Papaveraceae, 160
- Para grass, 8
- Parasonsia* Pinto, 278
- Parsley family, 290-292
- Pariti tiliaceum*, 252
- Paritium tiliaceum*, 252
- Paspalum, 58
  - fimbriate, 58
  - Panama, 60
  - seashore, 66
- Paspalum*
  - conjugatum*, 56
  - dilatatum*, 58
  - Larranagai*, 64
  - Orbiculare*, 62
  - Sanguinale*, 30
  - Urvillei*, 64
  - vaginatum*, 66
  - Vaseyanum*, 64
- Passiflora*
  - edulis* f. *flavicarpa*, 459
  - foetida*, 272
  - laurifolia*, 459
  - mollissima*, 459
  - pulchella*, 274
  - suberosa*, 459
  - subpeltata*, 459
- Passifloraceae, 272-274, 459
- Passion flower family
  - family, 272-274
  - scarlet-fruited, 272
  - two-lobed, 274
  - white, 459
  - wing-leaf, 274
- Pauohiika, 322
- Pearl flower, 459
- Pectinate lovegrass, 44
- Pennisetum*, feathery, 72
- Pennisetum*
  - asperifolium*, 70
  - glaucum*, 76
  - purpureum*, 68
  - Ruppelii*, 70
  - setaceum*, 70
  - setosum*, 72
- Pennywort
  - Asiatic, 290
  - marsh, 460
- Perennial foxtail, 458
- Peria, 378
- Peruvian daisy, 457
- Petty spurge, 236
- Phalaris setacea*, 70
- Phlomis nepetaefolia*, 340
- Phyllanthus*
  - debilis*, 240
  - Niruri*, 240
  - Physalis peruviana*, 354
- Phytolacca*
  - acinosa*, 148
  - octandra*, 148
- Phytolaccaceae, 148
- Picridium, 432
- Picridium*
  - tingitanum*, 432
  - vulgaris*, 432
- Picris hieracioides*, 426
- Pigweed, 150
- Pikake-honohono, 326
- Pilea microphylla*, 460
- Pilipiliula, 18
- Pimpernel
  - poisonous, 296
  - scarlet, 296
- Pink family, 154-158
- Pink wood-sorrel, 226
- Pitted beardgrass, 6
- Pittosporaceae, 168
- Pittosporum* family, 168

## INDEX (P-R)

---

- Pittosporum*  
  *philliraeoides*, 168  
  *undulatum*, 168  
Plantaginaceae, 364-366  
*Plantago*  
  *lanceolata*, 364  
  *major*, 366  
Plantain  
  broad-leaved, 366  
  family, 364-366  
  narrow-leaved, 364  
*Pluchea*  
  *indica*, 428  
  *odorata*, 457  
Plush grass, 16  
*Poa*  
  *amabilis*, 46  
  *annua*, 458  
  *caroliniana*, 44  
  *cilianensis*, 42  
  *pectinacea*, 44  
  *tenella*, 46  
Poha, 354  
Pohuehue, 310  
Poisonous pimpernel, 296  
Pokeweed, 148  
Pokeweed family, 148  
Polygonaceae, 124-126  
Polypodiaceae, 459  
Pontederiaceae, 459  
Popolo, 358  
Poppy  
  family, 160  
  prickly, 160  
Portuguese lily, 114  
*Portulaca oleracea*, 150  
Portulacaceae, 150  
*Prenanthes japonica*, 452  
Prickly  
  pear, 276  
  poppy, 160  
  sida, 264  
Primrose family, 296  
Primrose willow, 288  
Primulaceae, 296  
Prostrate spurge, 238  
Proteaceae, 122, 459  
*Prunella vulgaris*, 342  
*Pseudo-elephantopus spicatus*, 430  
*Psidium*  
  *Cattleianum* f. *lucidum*, 459  
  Guajava, 459  
*Pteridium aquilinum* var. *decompositum*, 459  
Puakala, 160  
Pualele, 436  
  red, 404  
Puapihi, 454  
Pukiawe, 294  
Puncture vine, 230  
  false, 228  
Purple nutsedge, 106  
Purslane, 150  
  family, 150  
Radiate fingergrass, 16  
Ragweed  
  common, 388  
  false, 416  
Raspberry, yellow Himalayan, 459  
Rattail grass, 84  
Rattle pod, 196  
  fuzzy, 190  
  long-beaked, 192  
  smooth, 194  
Red pualele, 404  
Red spiderling, 459  
Redstem filaree, 222  
Redtop, 2  
  Natal, 74  
*Reichardia picroides*, 432  
*Rhaphis*  
  *acicularis*, 18  
  *trivialis*, 18  
*Rhizophora Mangle*, 280  
Rhizophoraceae, 280  
Rhodes grass, 458  
Rhodomyrtus, 282  
*Rhodomyrtus tomentosa*, 282  
*Rhynchelytrum repens*, 74
-

## INDEX (R-S)

---

- Rhynchosia, 216  
*Rhynchosia minima*, 216  
Rice grass, 62  
*Richardia*  
    *brasiliensis*, 374  
    *scabra*, 374  
Richardsonia, 374  
*Ricinus communis*, 242  
Rosaceae, 170, 459  
Rose family, 170  
Rose myrtle, downy, 282  
Rough-leaved false vervain, 330  
Rubiaceae, 368-374  
*Rubus*  
    *ellipticus*, 459  
    *Koehnei*, 170  
    *maucicola*, 170  
    *moluccanus*, 459  
    *penetrans*, 170  
    *rosaefolius*, 459  
*Rumex spinosa*, 126  
  
*Saccharum repens*, 74  
Sacramento bur, 246  
Sage, crimson, 344  
St. Augustine grass, 90  
St. Johnswort, 270  
*Salsola*  
    *Kali* var. *tenuifolia*, 132  
    *pestifer*, 132  
Saltbush, Australian, 457  
*Salvia coccinea*, 344  
Sandbur, 10  
Sapindaceae, 460  
Scarlet pimpernel, 296  
Scarlet-fruited passion flower, 272  
*Schinus terebinthifolius*, 457  
*Scirpus*  
    *annuus*, 108  
    *dicotomus*, 108  
    *diphylla*, 108  
*Scorzonera*  
    *picroides*, 432  
    *tingitana*, 432  
  
Scotch broom, 200  
Seashore paspalum, 66  
Sedge family, 96-108  
Self-heal, 342  
*Senebiera didyma*, 166  
*Senecio*  
    *hieracifolia*, 406  
    *mikanoides*, 434  
Sensitive plant, 214  
Sessile joyweed, 136  
*Setaria*  
    *geniculata*, 458  
    *glauca*, 76  
    *lutescens*, 76  
    *palmaefolia*, 78  
    *verticillata*, 80  
Sida, 260  
    prickly, 264  
*Sida*  
    *cordifolia*, 260  
    *grandifolia*, 248  
    *mollis*, 248  
    *rhombifolia*, 262  
    *spinosa*, 264  
*Siegesbeckia orientalis*, 436  
*Silene*  
    *anglica*, 156  
    *gallica*, 156  
Silk oak, 459  
Silky oak family, 122  
*Sinapis nigra*, 164  
Slender amaranth, 143  
Slender crabgrass, 30  
Small yellow crown-beard, 436  
Small-flowered catchfly, 156  
Small-leaf horseweed, 400  
Smooth crabgrass, 34  
Smooth rattle pod, 194  
Smutgrass, 88  
Soap grass, 22  
Solanaceae, 348-360, 460  
*Solanum*  
    *aculeatissimum*, 356  
    *elaeagnifolium*, 460  
    *Fauriei*, 358

## INDEX (S-T)

---

- nigrum*, 358
- nodiflorum*, 358
- sarrachoides*, 460
- Sodomeum*, 360
- Sonchus oleraceus*, 438
- Sorghum halepense*, 82
- Sour bush, 457
- Sour grass, 94
- Sow thistle, 438
- Spanish
  - broom, 218
  - clover, 206, 458
  - needle, 390
- Spartium*
  - junceum*, 218
  - scoparium*, 200
- Spear thistle, 396
- Spargula arvensis*, 158
- Spermacoce laevis*, 368
- Spider flower, wild, 162
- Spiderwort family, 112
- Spike elephantopus, 430
- Spiny amaranth, 140
- Spiny-bur, 382
- Spleen amaranth, 140
- Sporobolus*
  - africanus*, 84
  - Berteroanus*, 88
  - capensis*, 84
  - diander*, 86
  - indicus*, 88
  - Poiretii*, 88
- Spurge
  - family, 232-242
  - garden, 234
  - graceful, 232
  - petty, 236
  - prostrate, 238
  - thyme-leaved, 458
- Stachys arvensis*, 346
- Stachytarpheta, 330
- Stachytarpheta*
  - australis*, 330
  - cayennensis*, 330
  - dichotoma*, 330
  - jamaicensis*, 332
  - urticaefolia*, 334
- Staggerweed, 346
- Star grass, 12
- Star-bur, 382, 384
- Star-of-Bethlehem, 380
- Stenotaphrum secundatum*, 90
- Steculiaceae, 268
- Stinging nettle, 120
- Stinkgrass, 42
- Stinkweed, 442
- Stipa cernua*, 92
- Strawberry guava, 459
- Stylurus Banksii*, 122
- Styphelia Tameiameiae*, 294
- Sweet fennel, 292
- Swine watercress, 166
- Swollen fingergrass, 14
- Sword fern, 459
- Synedrella, 440
- Synedrella nodiflora*, 440
- Syntherisma*
  - chinensis*, 34
  - consanguinea*, 30
  - Helleri*, 34
  - pruriens*, 30
  - sanguinalis*, 32
- Tagetes minuta*, 442
- Tall fringe-rush, 108
- Tall panicum, 8
- Tar weed, 278
- Taraxacum officinale*, 444
- Tassel flower, 457
- Tawny crotalaria, 188
- Tea
  - Japanese, 184
  - Mexican, 130
- Telegraph plant, 420
- Tetrazygia bicolor*, 459
- Thatching grass, 458
- Themeda gigantea*, 458
- Thimble berry, 459



## INDEX (T-W)

---

- Thistle  
  bull, 396  
  Maltese, 392  
  Russian, 132  
  sow, 438  
  spear, 396  
Three-flowered beggarweed, 204  
Thumbergia, white, 362  
*Thunbergia*  
  *fragrans*, 362  
  *grandiflora*, 457  
Thyme-leaved spurge, 458  
*Tibouchina Urvilleana*, 459  
Tiliaceae, 244-246, 460  
*Tithonia diversifolia*, 446  
*Tithymalus Peplus*, 236  
Tobacco, tree, 352  
Tomato family, 348-360  
Torpedo grass, 52  
Torrid panic grass, 54  
Tree  
  daisy, 424  
  marigold, 446  
  tobacco, 352  
*Trema orientalis*, 460  
*Tribulus*  
  *Cistoides*, 228  
  *terrestris*, 230  
Tribulus family, 228-230  
*Trichachne insularis*, 94  
*Tricholaena*  
  *repens*, 74  
  *rosea*, 74  
*Tridax procumbens*, 457  
*Tritonia crocosmiflora*, 114  
*Triumfetta*  
  *Bartramia*, 244  
  *semitribola*, 246  
Two-lobed passion flower, 274  
  
*Ulex europaeus*, 220  
Ulmaceae, 460  
Uluhe, 458  
Umbelliferae, 290-292, 460  
  
*Urena lobata*, 266  
Urticaceae, 120, 460  
  
*Vachellia farnesiana*, 174  
*Valota insularis*, 94  
Vasey grass, 64  
Verbena, 336  
*Verbena*  
  *bonariensis*, 336  
  *cayennensis*, 330  
  *jamaicensis*, 332  
  *litoralis*, 336  
Verbenaceae, 326-336, 460  
*Verbesina*  
  *alba*, 400  
  *encelioides*, 457  
  *prostrata*, 400  
*Vernonia cinerea*, 448  
Vervain  
  Cayenne, 330  
  family, 326-336  
  Jamaica, 332  
  nettle-leaved, 334  
  rough-leaved false, 330  
Violet grass, 34  
Virgate mimosa, 458  
  
Wainuku grass, 52  
Waltheria, 268  
*Waltheria*  
  *americana*, 268  
  *Fauriei*, 244  
Wandering Jew, 112  
Watercress, swine, 166  
Water hyacinth, 459  
Wattle black, 172  
Wedelia, 457  
*Wedelia trilobata*, 457  
West Indian foxtail, 4  
White  
  ginger, 460  
  horse-nettle, 460  
  kyllinga, 104  
  moho, 460

## INDEX (W-Z)

---

- passion flower, 459
- thunbergia, 362
- White-flowered morning-glory, 306
- Wild
  - marigold, 442
  - peppergrass, 458
  - spider flower, 162
  - spiny cucumber, 376
  - spurge, 458
- Wing-leaf passion flower, 274
- Wiregrass, 40
  - beach, 26
- Wood-sorrel
  - family, 224-226
  - pink, 226
  - yellow, 224
- Woodrose, 457
- Xanthium*
  - pennsylvanicum*, 450
  - saccharatum*, 450
  - strumarium*, 450
- Yellow
  - bristleglass, 76
  - foxtail, 76
  - ginger, 460
  - granadilla, 459
  - Himalayan raspberry, 459
  - liliko'i, 459
  - nickers, 178
  - nutsedge, 98
  - strawberry guava, 459
  - wood-sorrel, 224
- Youngia japonica*, 452
- Zingiberaceae, 460
- Zinnia, 454
  - Zinnia pauciflora*, 454
- Zygophyllaceae, 228-230

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